

CPC COOPERATIVE PATENT CLASSIFICATION

E FIXED CONSTRUCTIONS

BUILDING

E04 BUILDING

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](#)})

NOTES

1. This subclass covers working methods used in constructing new buildings and analogous working methods on existing buildings. Other working methods on existing buildings, except those for insulating, are classified in group [E04G 23/00](#).
2. In this subclass, the following term is used with the meaning indicated:
 - "ceiling" includes all the finishing material concealing the underside of the loadcarrying ceiling structure or roof structure.

WARNINGS

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

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|----------------------------|------------|---------------------------|
| E04B 1/682 | covered by | E04B 1/68 |
| E04B 1/684 | covered by | E04B 1/68 |
| E04B 1/686 | covered by | E04B 1/68 |
2. 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.

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|-------------|---|--------------|--|
| 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) | 1/046 | {using reinforcement loops protruding from the elements} |
| 1/0007 | . {Base structures; Cellars} | 1/06 | . . . the elements being prestressed |
| 1/0015 | . . {Cellars constructed from prefabricated units} | 1/08 | . . the elements consisting of metal |
| 1/0023 | . {Building characterised by incorporated canalisations (E04B 1/34869 takes precedence)} | 1/10 | . . the elements consisting of wood |
| 1/003 | . {Balconies; Decks} | 1/12 | . . the elements consisting of other material |
| 1/0038 | . . {Anchoring devices specially adapted therefor with means for preventing cold bridging} | 1/14 | . . the elements being composed of two or more materials (of reinforced concrete E04B 1/04) |
| 1/0046 | . {Loggias} | 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) |
| 2001/0053 | . {Buildings characterised by their shape or layout grid} | 1/161 | . . {with vertical and horizontal slabs, both being partially cast <u>in situ</u> } |
| 2001/0061 | . . {Buildings with substantially curved horizontal cross-section, e.g. circular} | 1/162 | . . . {with a central core, used as form, in order to form a continuous concrete shell} |
| 2001/0069 | . . {Prismatic shaped buildings with substantially triangular vertical cross-section} | 1/163 | . . {with vertical and horizontal slabs, only the vertical slabs being partially cast <u>in situ</u> (E04B 2/86 takes precedence)} |
| 2001/0076 | . . {Buildings with specific right-angled horizontal layout grid} | 1/164 | . . {with vertical and horizontal slabs, only the horizontal slabs being partially cast <u>in situ</u> } |
| 2001/0084 | . . {Buildings with non right-angled horizontal layout grid, e.g. triangular or hexagonal} | 1/165 | . . {with elongated load-supporting parts, cast <u>in situ</u> (E04B 1/161 , E04B 1/163 and E04B 1/164 take precedence)} |
| 2001/0092 | . . . {Small buildings with hexagonal or similar horizontal cross-section} | 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)} |
| 1/02 | . Structures consisting primarily of load-supporting, block-shaped, or slab-shaped elements (E04B 1/32 - E04B 1/36 take precedence) | 1/167 | . . {with permanent forms made of particular materials, e.g. layered products} |
| 1/04 | . . the elements consisting of concrete, e.g. reinforced concrete, or other stone-like material | 1/168 | . . . {flexible} |
| 1/043 | . . . {Connections specially adapted therefor} | 1/169 | {inflatable} |

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|-----------|--|-----------|---|
| 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} |
| | NOTE Group E04B 1/19 takes precedence over groups E04B 1/20 - E04B 1/30 . {This Note corresponds to IPC Note (1) relating to E04B 1/19 , E04B 1/20 - E04B 1/30 .} | 2001/1993 | {Details of framework supporting structure, e.g. posts or walls} |
| 1/185 | {Connections not covered by E04B 1/21 and E04B 1/2403 , e.g. connections between structural parts of different material} | 2001/1996 | {Tensile-integrity structures, i.e. structures comprising compression struts connected through flexible tension members, e.g. cables} |
| 1/19 | Three-dimensional framework structures | 1/20 | the supporting parts consisting of concrete, e.g. reinforced concrete, or other stonelike material |
| 1/1903 | {Connecting nodes specially adapted therefor} | 1/21 | Connections specially adapted therefor |
| 1/1906 | {with central spherical, semispherical or polyhedral connecting element} | 1/215 | {comprising metallic plates or parts} |
| 1/1909 | {with central cylindrical connecting element} | 1/22 | with parts being prestressed |
| 1/1912 | {with central cubical connecting element} | 1/24 | the supporting parts consisting of metal |
| 2001/1915 | {with strut engaging means at the edges of the cube} | 1/2403 | {Connection details of the elongated load-supporting parts} |
| 2001/1918 | {with connecting nodes having flat radial connecting surfaces} | 2001/2406 | {Connection nodes} |
| 2001/1921 | {with connecting nodes having radial connecting stubs} | 2001/2409 | {Hooks, dovetails or other interlocking connections} |
| 2001/1924 | {Struts specially adapted therefor} | 2001/2412 | {Keyhole connections} |
| 2001/1927 | {of essentially circular cross section} | 2001/2415 | {Brackets, gussets, joining plates} |
| 2001/193 | {with flattened connecting parts, e.g. ends} | 2001/2418 | {Details of bolting} |
| 2001/1933 | {of polygonal, e.g. square, cross section} | 2001/2421 | {Socket type connectors} |
| 2001/1936 | {Winged profiles, e.g. with a L-, T-, U- or X-shaped cross section} | 2001/2424 | {Clamping connections other than bolting or riveting} |
| 2001/1939 | {Inflatable struts} | 2001/2427 | {using adhesives or hardening masses} |
| 2001/1942 | {Struts adjustable in length} | 2001/243 | {Assembling by non resilient deformation other than riveting} |
| 2001/1945 | {Wooden struts} | 2001/2433 | {using a removable key} |
| 2001/1948 | {Concrete struts} | 2001/2436 | {Snap-fit connections} |
| 2001/1951 | {uninterrupted struts situated in the outer planes of the framework} | 2001/2439 | {Adjustable connections, e.g. using elongated slots or threaded adjustment elements} |
| 2001/1954 | {uninterrupted struts connecting alternately with the outer planes of the framework, e.g. zig-zagging struts} | 2001/2442 | {Connections with built-in weakness points} |
| 2001/1957 | {Details of connections between nodes and struts} | 2001/2445 | {Load-supporting elements with reinforcement at the connection point other than the connector} |
| 2001/196 | {Screw connections with axis parallel to the main axis of the strut} | 2001/2448 | {Connections between open section profiles} |
| 2001/1963 | {Screw connections with axis at an angle, e.g. perpendicular, to the main axis of the strut} | 2001/2451 | {Connections between closed section profiles} |
| 2001/1966 | {Formlocking connections other than screw connections} | 2001/2454 | {Connections between open and closed section profiles} |
| 2001/1969 | {Ball and socket type connection} | 2001/2457 | {Beam to beam connections} |
| 2001/1972 | {Welded or glued connection} | 2001/246 | {Post to post connections} |
| 2001/1975 | {Frameworks where the struts are directly connected to each other, i.e. without interposed connecting nodes or plates} | 2001/2463 | {Connections to foundations} |
| 2001/1978 | {Frameworks assembled from preformed subframes, e.g. pyramids} | 2001/2466 | {Details of the elongated load-supporting parts} |
| 2001/1981 | {characterised by the grid type of the outer planes of the framework} | 2001/2469 | {Profile with an array of connection holes} |
| 2001/1984 | {rectangular, e.g. square, grid} | 2001/2472 | {Elongated load-supporting part formed from a number of parallel profiles} |
| 2001/1987 | {triangular grid} | 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}
 - 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}
 - 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 1/345](#) 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](#))
- WARNING**
- Group [E04B 1/343](#) is impacted by reclassification into groups [E04B 1/34305](#), [E04B 1/3431](#), [E04B 1/34312](#), [E04B 1/34315](#), [E04B 1/34317](#), [E04B 1/34321](#), [E04B 1/34326](#), [E04B 1/34331](#), [E04B 1/34384](#), [E04B 1/344](#), [E04B 1/3441](#), [E04B 1/3442](#) - [E04B 1/3444](#), [E04B 1/3445](#), [E04B 1/3447](#), [E04B 1/3448](#), [E04B 1/3449](#), [E04B 1/345](#) and [E04B 1/3455](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 1/34305 . . {telescopic}
- WARNING**
- Groups [E04B 1/34305](#) - [E04B 1/34312](#) are incomplete pending reclassification of documents from group [E04B 1/343](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 1/3431 . . . {with only one level of nesting}
 - 1/34312 . . . {Vertical telescopic structures}
 - 1/34315 . . {characterised by separable parts}
- WARNING**
- Groups [E04B 1/34315](#) - [E04B 1/34331](#) are incomplete pending reclassification of documents from group [E04B 1/343](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 1/34317 . . . {Set of building elements forming a self-contained package for transport before assembly}
 - 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, e.g. mobile home structures (vehicles comprising living accommodation for people, e.g. caravans, camping or like vehicles [B60P 3/32](#))}
- 1/34342 . . . {Skirtings therefor}
- 1/34347 . . . {Anchoring means therefor}
- 1/34352 . . . {Base structures or supporting means therefor}
- 1/34363 . . {with provisions to raise or lower the whole structure}
- 1/34384 . . {Assembling details for foldable, separable, collapsible or retractable structures}

WARNING

Group [E04B 1/34384](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Groups [E04B 1/343](#) and [E04B 1/34384](#) should be considered in order to perform a complete search.

- 1/344 . . with hinged parts

WARNING

Group [E04B 1/344](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Group [E04B 1/344](#) is also impacted by reclassification into group [E04B 1/3449](#).

Groups [E04B 1/343](#), [E04B 1/344](#) and [E04B 1/3449](#) should be considered in order to perform a complete search.

- 1/3441 . . . {with articulated bar-shaped elements}

WARNING

Group [E04B 1/3441](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Groups [E04B 1/343](#) and [E04B 1/3441](#) should be considered in order to perform a complete search.

- 1/3442 . . . {folding out from a core cell}

WARNING

Group [E04B 1/3442](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Group [E04B 1/3442](#) is also impacted by reclassification into group [E04B 1/3449](#).

Groups [E04B 1/343](#), [E04B 1/3442](#) and [E04B 1/3449](#) should be considered in order to perform a complete search.

- 1/3444 {with only lateral unfolding}

WARNING

Group [E04B 1/3444](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Group [E04B 1/3444](#) is also impacted by reclassification into group [E04B 1/3449](#).

Groups [E04B 1/343](#), [E04B 1/3444](#) and [E04B 1/3449](#) should be considered in order to perform a complete search.

- 1/3445 . . . {foldable in a flat stack of parallel panels}

WARNING

Group [E04B 1/3445](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Group [E04B 1/3445](#) is also impacted by reclassification into group [E04B 1/3449](#).

Groups [E04B 1/343](#), [E04B 1/3445](#) and [E04B 1/3449](#) should be considered in order to perform a complete search.

- 1/3447 {Portal- or saddle-shaped structures}

WARNING

Group [E04B 1/3447](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Groups [E04B 1/343](#) and [E04B 1/3447](#) should be considered in order to perform a complete search.

- 1/3448 . . . {with rotating shell-forming segments}

WARNING

Group [E04B 1/3448](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Groups [E04B 1/343](#) and [E04B 1/3448](#) should be considered in order to perform a complete search.

- 1/3449 . . . {with living hinge ([E04B 1/345](#) takes precedence)}

WARNING

Group [E04B 1/3449](#) is incomplete pending reclassification of documents from groups [E04B 1/343](#), [E04B 1/344](#), [E04B 1/3442](#), [E04B 1/3444](#) and [E04B 1/3445](#).

Group [E04B 1/3449](#) is also impacted by reclassification into group [E04B 1/345](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 1/345 . . . {Structures deriving their rigidity from concertina folds}

WARNING

Group [E04B 1/345](#) is incomplete pending reclassification of documents from groups [E04B 1/343](#) and [E04B 1/3449](#).

Groups [E04B 1/343](#), [E04B 1/3449](#) and [E04B 1/345](#) should be considered in order to perform a complete search.

- 1/3455 . . {Wheeled arch-type structures}

WARNING

Group [E04B 1/3455](#) is incomplete pending reclassification of documents from group [E04B 1/343](#).

Groups [E04B 1/343](#) and [E04B 1/3455](#) should be considered in order to perform a complete search.

- 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}
 - 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}
 - 1/388 . . {Separate connecting elements (Connecting devices specially adapted for embedding in concrete [E04B 1/41](#); Dowels, i.e. members adapted to penetrate the surfaces of two parts and to take the shear stresses [E04B 1/48](#))}
 - 2001/389 . . . {Brackets}
 - 1/41 . . Connecting devices specially adapted for embedding in concrete or masonry ({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](#); 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](#))}

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| 2001/4192 | . . . {attached to concrete reinforcing elements, e.g. rods or wires} | 1/6183 | {with rotatable locking means co-operating with a recess} |
| 1/48 | . . Dowels, i.e. members adapted to penetrate the surfaces of two parts and to take the shear stresses | 1/6187 | {by means on top and/or bottom surfaces of the slabs} |
| 1/483 | . . . {Shear dowels to be embedded in concrete} | 2001/6191 | {by means on the corners of the slabs} |
| 1/486 | . . . {Shear dowels for wood (E04B 1/49 takes precedence)} | 2001/6195 | . . . {the slabs being connected at an angle, e.g. forming a corner} |
| 1/49 | . . . with self-penetrating parts, e.g. claw dowels | 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) |
| 1/541 | . . {Joints substantially without separate connecting elements, e.g. jointing by inter-engagement} | 1/625 | . . {Sheets or foils allowing passage of water vapor but impervious to liquid water; house wraps} |
| 1/58 | . . of bar-shaped building elements {(framework connections E04B 1/21 , E04B 1/2403 , E04B 1/2604)} | 1/64 | . . for making damp-proof; Protection against corrosion (sealings E04B 1/66) |
| 1/5806 | . . . {with a cross-section having an open profile} | NOTE | |
| 1/5812 | {of substantially I - or H - form} | Group E04B 1/64 is not used for classification. Documents are classified in subgroups only or in groups E04B 1/66 , E04B 1/70 | |
| 1/5818 | {of substantially U - form} | 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)} |
| 1/5825 | . . . {with a closed cross-section} | 1/644 | . . . {Damp-proof courses (in combination with lintels E04C 3/02)} |
| 1/5831 | {of substantially rectangular form} | 1/646 | {obtained by removal and replacement of a horizontal layer of an existing wall} |
| 1/5837 | {of substantially circular form} | 1/648 | {obtained by injection or infiltration of water-proofing agents into an existing wall} |
| 1/5843 | {with ends provided with protuberances} | 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) |
| 1/585 | {with separate connection devices} | 1/665 | . . . {Sheets or foils impervious to water and water vapor} |
| 2001/5856 | {using the innerside thereof} | 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) |
| 2001/5862 | . . . {Angularly adjustable connections without hinge pin} | 1/6801 | {Fillings therefor} |
| 2001/5868 | . . . {Hinged connections} | 1/6803 | {Joint covers (E04B 1/6815 takes precedence)} |
| 2001/5875 | . . . {using exterior clamping plates or shells} | 1/6804 | {specially adapted for floor parts} |
| 2001/5881 | . . . {using an undercut groove, e.g. dovetail groove} | 1/6806 | {Waterstops (E04B 1/6807 takes precedence)} |
| 2001/5887 | . . . {using connectors with sockets} | 1/6807 | {Expansion elements for parts cast in situ } |
| 2001/5893 | . . . {Puzzle type connections} | 1/6809 | {Reverse side strips} |
| 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} | | |

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|-----------|---------|---|-----------|-----------|---|
| 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} |
| 2001/746 | | {Recycled materials, e.g. made of used tires, bumpers or newspapers} | 1/806 | | {with air or gas pockets included in the slab} |
| 2001/747 | | {Corrugated materials} | 1/82 | . . . | specifically with respect to sound only ({of floors or ceilings E04B 9/001 }; noise damping in ducts or channels E04F 17/00 ; noise damping in general G10K 11/16) |
| 2001/748 | | {Honeycomb materials} | 1/8209 | | {sound absorbing devices (E04B 1/8218 , E04B 1/8227 take precedence)} |
| 1/76 | . . . | specifically with respect to heat only (heat insulation in general F16L 59/00) | 1/8218 | | {soundproof enclosures} |
| 1/7604 | | {fillings for cavity walls} | 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} |

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|-----------|---------|--|-----------|---------|--|
| 2001/8263 | | {Mounting of acoustical elements on supporting structure, e.g. framework or wall surface} | 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 }) |
| 2001/8272 | | {Resiliently mounted wall cladding acting as a diaphragmatic sound damper} | 1/941 | | {Building elements specially adapted therefor} |
| 2001/8281 | | {Flat elements mounted parallel to a supporting surface with an acoustically active air gap between the elements and the mounting surface} | 1/942 | | {slab-shaped} |
| 2001/829 | | {Flat elements mounted at an angle, e.g. right angle, to the supporting surface} | 1/943 | | {elongated} |
| 1/84 | | Sound-absorbing elements | 1/944 | | {covered with fire-proofing material} |
| 1/8404 | | {block-shaped} | 1/945 | | {Load-supporting structures specially adapted therefor} |
| 1/8409 | | {sheet-shaped} | 1/946 | | {Protection against smoke or toxic gases} |
| 2001/8414 | | {with non-planar face, e.g. curved, eggcrate shaped} | 1/947 | | {by closing openings in walls or the like in the case of fire (fire-proof doors E06B 5/16)} |
| 2001/8419 | | {Acoustical cones or the like, e.g. for anechoic chambers} | 1/948 | | {Fire-proof sealings or joints (for doors or windows E06B 5/164)} |
| 2001/8423 | | {Tray or frame type panels or blocks, with or without acoustical filling} | 2001/949 | | {Construction elements filled with liquid, e.g. water, either permanently or only in case of fire} |
| 2001/8428 | | {containing specially shaped acoustical bodies, e.g. funnels, egg-crates, fanfolds} | 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) |
| 2001/8433 | | {with holes in their face} | 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) |
| 2001/8438 | | {Slot shaped holes} | 1/994 | | {Acoustical surfaces with adjustment mechanisms} |
| 2001/8442 | | {Tray type elements} | 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) |
| 2001/8447 | | {with two facing trays} | 2/02 | | built-up from layers of building elements |
| 2001/8452 | | {with peripheral frame members} | 2002/0202 | | {Details of connections} |
| 2001/8457 | | {Solid slabs or blocks} | 2002/0204 | | {Non-undercut connections, e.g. tongue and groove connections} |
| 2001/8461 | | {layered} | 2002/0206 | | {of rectangular shape} |
| 2001/8466 | | {with an intermediate layer formed of lines or dots of elastic material} | 2002/0208 | | {of trapezoidal shape} |
| 2001/8471 | | {with non-planar interior transition surfaces between layers, e.g. faceted, corrugated} | 2002/021 | | {of triangular shape} |
| 2001/8476 | | {with acoustical cavities, with or without acoustical filling} | 2002/0213 | | {of round shape} |
| 2001/848 | | {the cavities opening onto the face of the element} | 2002/0215 | | {with separate protrusions} |
| 2001/8485 | | {the opening being restricted, e.g. forming Helmholtz resonators} | 2002/0217 | | {of prismatic shape} |
| 2001/849 | | {Groove or slot type openings} | 2002/0219 | | {of pyramidal shape} |
| 2001/8495 | | {the openings going through from one face to the other face of the element} | 2002/0221 | | {of conical shape} |
| 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} | | | |

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| 2002/0223 | {of cylindrical shape} | 2/16 | using elements having specially-designed means for stabilising the position |
| 2002/0226 | {with tongues and grooves next to each other on the end surface} | 2/18 | by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails |
| 2002/0228 | {with tongues next to each other on one end surface and grooves next to each other on opposite end surface} | 2/20 | by filling material with or without reinforcements in small channels in, or in grooves between, the elements |
| 2002/023 | {with rabbets, e.g. stepped} | 2/22 | using elements having a general shape differing from that of a parallelepiped |
| 2002/0232 | {Undercut connections, e.g. using undercut tongues and grooves} | 2/24 | the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams |
| 2002/0234 | {Angular dovetails} | 2/26 | the walls being characterised by fillings in all cavities in order to form a wall construction |
| 2002/0236 | {tapered, i.e. dovetail narrows in the direction of tongue or groove} | 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 |
| 2002/0239 | {Round dovetails} | 2/30 | using elements having specially designed means for stabilising the position; Spacers for cavity walls {(masonry wall ties E04B 1/4178)} |
| 2002/0241 | {tapered, i.e. dovetail narrows in the direction of tongue or groove} | 2/32 | by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails |
| 2002/0243 | {Separate connectors or inserts, e.g. pegs, pins or keys} | 2/34 | by filling material with or without reinforcements in small channels in, or in grooves between, the elements |
| 2002/0245 | {Pegs or pins} | 2/36 | using elements having a general shape differing from that of a parallelepiped |
| 2002/0247 | {Strips or bars} | 2/38 | the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams |
| 2002/025 | {U-shaped, e.g. brackets} | 2/40 | the walls being characterised by fillings in all cavities in order to form a wall construction |
| 2002/0252 | {Dovetail keys} | 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 |
| 2002/0254 | {Tie rods} | 2/44 | using elements having specially-designed means for stabilising the position; Spacers for cavity walls {(masonry wall ties E04B 1/4178)} |
| 2002/0256 | {Special features of building elements} | 2/46 | by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails |
| 2002/0258 | {Gripping or handling aids} | 2/48 | by filling material with or without reinforcements in small channels in, or in grooves between, the elements |
| 2002/026 | {Splittable building elements} | 2/50 | using elements having a general shape differing from that of a parallelepiped |
| 2002/0263 | {Building elements for making angled walls} | 2/52 | the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams |
| 2002/0265 | {Building elements for making arcuate walls} | 2/54 | the walls being characterised by fillings in all cavities in order to form a wall construction |
| 2002/0267 | {Building elements with the appearance of several bricks} | 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) |
| 2002/0269 | {Building elements with a natural stone facing} | 2/562 | {with fillings between the load-bearing elongated members} |
| 2002/0271 | {Building elements with the appearance of rock layers} | 2002/565 | {with a brick veneer facing} |
| 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} | | |
| 2002/0295 | {of which the width is equal to the wall thickness} | | |
| 2002/0297 | {of which the width is less than the wall thickness} | | |
| 2/04 | Walls having neither cavities between, nor in, the solid elements | | |
| 2/06 | using elements having specially-designed means for stabilising the position | | |
| 2/08 | by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails | | |
| 2/10 | by filling material with or without reinforcements in small channels in, or in grooves between, the elements | | |
| 2/12 | using elements having a general shape differing from that of a parallelepiped | | |
| 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 | | |

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| 2002/567 | . . {with posts or pillars made from a plurality of smaller prefabricated elements} | 2002/742 | {Details of panel top cap} |
| 2/58 | . . with elongated members of metal | 2/7422 | {with separate framed panels without intermediary support posts} |
| 2/60 | . . . characterised by special cross-section of the elongated members | 2/7424 | {Glazing details} |
| 2/62 | the members being formed of two or more elements in side-by-side relationship | 2/7425 | {Details of connection of panels (E04B 2/7427 takes precedence)} |
| 2/64 | . . with elongated members of concrete | 2/7427 | {with adjustable angular connection of panels} |
| 2/66 | . . . characterised by special cross-section of the elongated members | 2/7429 | {using flexible hinges} |
| 2/68 | . . . made by filling-up wall cavities (E04B 2/24, E04B 2/38, E04B 2/52 take precedence) | 2/7431 | {using hinges having two parallel rotation axes} |
| 2/70 | . . with elongated members of wood | 2/7433 | {with panels and support posts} |
| 2/701 | . . . {with integrated supporting and obturation function} | 2/7435 | {Glazing details} |
| 2/702 | {with longitudinal horizontal elements (E04B 2/704, E04B 2/705 take precedence)} | 2/7437 | {with panels hooked onto posts (E04B 2/7438 takes precedence)} |
| 2/703 | {with longitudinal vertical elements} | 2/7438 | {with adjustable angular connection of panels to posts} |
| 2/704 | {with longitudinal horizontal elements shorter than the length of a wall} | 2/744 | {using angularly-spaced longitudinal grooves of the posts} |
| 2/705 | {with longitudinal horizontal elements placed between columns} | 2/7442 | {hinged connections (E04B 2/7444 takes precedence)} |
| 2/706 | . . . {with supporting function} | 2/7444 | {panels hooked onto the rim or in a groove of circular posts} |
| 2/707 | {obturation by means of panels} | 2002/7446 | {Post-like profiles for connecting panels at an angle} |
| 2/708 | {obturation by means of longitudinal elements with a convex external surface} | 2/7448 | . . . {with separate framed panels without intermediary posts, extending from floor to ceiling} |
| 2/709 | {obturation by means of longitudinal elements with a plane external surface} | 2/745 | {Glazing details} |
| 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) | 2/7451 | {with false tongue joints} |
| 2/721 | . . {connections specially adapted therefor} | 2/7453 | . . . {with panels and support posts, extending from floor to ceiling} |
| 2/723 | . . {constituted of gypsum elements} | 2/7455 | {Glazing details} |
| 2002/725 | . . . {Corner or angle connection details} | 2/7457 | {with wallboards attached to the outer faces of the posts, parallel to the partition (E04B 2/7459 takes precedence)} |
| 2002/726 | . . . {Clips for butt-joining plasterboards} | 2/7459 | {with telescoping posts to compensate for floor or ceiling irregularities} |
| 2002/728 | . . . {Butt-joining plasterboards in the space between two studs} | 2002/7461 | . . {Details of connection of sheet panels to frame or posts} |
| 2/74 | . Removable non-load-bearing partitions; Partitions with a free upper edge (framed panels E04C 2/38) | 2002/7462 | . . . {using resilient connectors, e.g. clips} |
| 2/7401 | . . {assembled using panels without a frame or supporting posts, with or without upper or lower edge locating rails} | 2002/7464 | {clasping a flange of a profile} |
| 2/7403 | . . . {with special measures for sound or thermal insulation including fire protection} | 2002/7466 | . . . {using hooks} |
| 2/7405 | . . . {with free upper edge, e.g. for use as office space dividers} | 2002/7468 | . . . {using magnets} |
| 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)} | 2002/747 | . . . {using hook and loop-type fasteners} |
| 2/7409 | . . . {special measures for sound or thermal insulation, including fire protection} | 2002/7472 | . . . {using adhesives} |
| 2/7411 | {Details for fire protection} | 2002/7474 | . . . {using releasable connectors actuatable with a key or a tool} |
| 2/7412 | {Posts or frame members specially adapted for reduced sound or heat transmission} | 2002/7475 | . . . {using connectors with claws penetrating the sheet panels} |
| 2/7414 | {Posts or frame members with projections for holding sound or heat insulating fillings} | 2002/7477 | . . . {Details of connections using screws or nails} |
| 2/7416 | . . . {with free upper edge, e.g. for use as office space dividers} | 2002/7479 | . . {Details of connection of flexible sheets to frame or posts} |
| 2002/7418 | {Accessories supported on the free upper edge, e.g. auxiliary panels, noise abatement devices} | 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} |

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| 2002/7494 | {the jacks being located at the top or the side of the partition} | 2/84 | . Walls made by casting, pouring, or tamping <u>in situ</u> (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 <u>in situ</u> E04G 21/02) |
| 2002/7496 | . . {using wedges to level or hold the partition in place} | 2/842 | . . {by projecting or otherwise applying hardenable masses to the exterior of a form leaf} |
| 2002/7498 | . . {Partitions for clean rooms} | 2/845 | . . . {the form leaf comprising a wire netting, lattice or the like} |
| 2/76 | . . with framework or posts of metal {(details of connections, thresholds or skirtings E04B 2/82)} | 2/847 | . . . {the form leaf comprising an insulating foam panel} |
| 2/761 | . . . {L-connections} | 2/86 | . . made in permanent forms |
| 2/762 | . . . {Cross connections} | 2/8605 | . . . {without spacers} |
| 2/763 | {with one continuous profile, the perpendicular one passing continuously through the first one} | 2/8611 | . . . {with spacers being embedded in at least one form leaf} |
| 2/764 | {with two interrupted profiles} | 2/8617 | {with spacers being embedded in both form leaves} |
| 2/765 | {with one continuous profile, the perpendicular one being interrupted} | 2/8623 | . . . {with spacers and at least one form leaf being monolithic} |
| 2/766 | . . . {T-connections} | 2/8629 | {with both form leaves and spacers being monolithic} |
| 2/767 | {Connections between wall studs and upper or lower locating rails} | 2/8635 | . . . {with ties attached to the inner faces of the forms (E04B 2/8611 and E04B 2/8623 take precedence)} |
| 2/768 | {allowing vertical movement of upper rail with respect to the stud, e.g. by using slots in the rail or stud} | 2/8641 | {using dovetail-type connections} |
| 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} | 2/8647 | . . . {with ties going through the forms} |
| 2/7809 | {of single or multiple tubular form} | 2/8652 | . . . {with ties located in the joints of the forms} |
| 2/7818 | {of substantially rectangular form} | 2/8658 | . . . {using wire netting, a lattice or the like as form leaves} |
| 2/7827 | {with all four sides of the profiles having substantially similar undercut grooves or connecting projections} | 2/8664 | . . . {using flexible material as form leaves (E04B 2/8658 takes precedence)} |
| 2/7836 | {with only two sides of the profiles having substantially similar undercut grooves or connecting projections} | 2002/867 | . . . {Corner details} |
| 2/7845 | {of curved cross-section, e.g. circular} | 2002/8676 | . . . {Wall end details} |
| 2/7854 | {of open profile} | 2002/8682 | . . . {Mixed technique using permanent and reusable forms} |
| 2/7863 | {of substantially I - section with web perpendicular to plane of partition} | 2002/8688 | . . . {Scaffoldings or removable supports therefor} |
| 2/7872 | {of substantially H - section with flanges perpendicular to plane of partition} | 2002/8694 | . . . {with hinged spacers allowing the formwork to be collapsed for transport} |
| 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} | 2/88 | . Curtain walls {(fixing of glass panes E06B 3/54)} |
| 2/789 | {of substantially U- or C- section} | 2/885 | . . {comprising a supporting structure for flush mounted glazing panels} |
| 2/80 | . . with framework or posts of wood | 2/90 | . . comprising panels directly attached to the structure {(E04B 2/885 takes precedence)} |
| 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} | 2/92 | . . . Sandwich-type panels |
| 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} | 2/94 | . . . Concrete panels (E04B 2/92 takes precedence) |
| 2/822 | {Elastic connections, e.g. inflated joints} | 2/96 | . . comprising panels attached to the structure through mullions or transoms {(E04B 2/885 takes precedence)} |
| 2/824 | {restrained elastically at one surface and inelastically at the opposing surface} | 2/962 | . . . {with angles or corners in the curtain wall} |
| 2/825 | . . . {the connection between the floor and the ceiling being achieved without any restraining forces acting in the plane of the partition} | 2/965 | . . . {Connections of mullions and transoms} |
| 2/827 | . . . {Partitions constituted of sliding panels} | 2/967 | . . . {Details of the cross-section of the mullions or transoms (E04B 2/965 takes precedence)} |
| 2/828 | . . . {Connections between partitions and structural walls} | 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](#))
- 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, truss-like structures, joists [E04C 3/02](#); roof coverings [E04D](#))
- 7/02 . with plane sloping surfaces, e.g. saddle roofs ([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}

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|-------------|---|----------|--|
| 7/12 | formed in bays, e.g. sawtooth roofs (E04B 7/10 takes precedence) | 9/061 | . . {supporting construction for curved ceilings} |
| 7/14 | Suspended roofs (suspended tents or canopies in general E04H 15/04) | 2009/062 | . . {Caps covering visible surfaces of the supporting construction} |
| 7/16 | Roof structures with movable roof parts (buildings for special purposes E04H) | 9/064 | . . {comprising extruded supporting beams} |
| 7/163 | . . {characterised by a pivoting movement of the movable roof parts (E04B 7/166 takes precedence)} | 9/065 | . . {comprising supporting beams having a folded cross-section} |
| 7/166 | . . {characterised by a translation movement of the movable roof part, with or without additional movements} | 9/067 | . . . {with inverted T-shaped cross-section} |
| 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) | 9/068 | . . . {with double web} |
| 7/20 | Roofs consisting of self-supporting slabs, e.g. able to be loaded | 9/08 | . . having the capability of expansion {, e.g. in case of fire} |
| 7/205 | . . {the slabs having non-structural supports for roofing materials (for slaps having insulating properties E04B 7/225)} | 9/10 | . . Connections between parallel members of the supporting construction (E04B 9/08 takes precedence) |
| 7/22 | . . the slabs having insulating properties, e.g. laminated with layers of insulating material | 9/12 | . . Connections between non-parallel members of the supporting construction (E04B 9/08 takes precedence) |
| 7/225 | . . . {the slabs having non-structural supports for roofing materials} | 9/122 | . . . {one member passing through the other member, both members laying at least partly in the same plane} |
| 7/24 | . . the slabs being collapsible {or retractable}, e.g. for transport | 9/125 | {both members being continuous members} |
| 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) | 9/127 | . . . {one member being discontinuous and abutting against the other member} |
| 9/001 | . {characterised by provisions for heat or sound insulation} | 9/14 | . . . all the members being discontinuous and laying at least partly in the same plane |
| 9/003 | . {with movable parts, e.g. pivoting panels, access doors} | 9/16 | . . . the members lying in different planes |
| 9/005 | . {composed of imitation beams or beam coverings} | 9/18 | . Means for suspending the supporting construction |
| 9/006 | . {with means for hanging lighting fixtures or other appliances to the framework of the ceiling} | 9/183 | . . {having a lower side adapted to be connected to a channel of the supporting construction} |
| 9/008 | . {with means for connecting partition walls or panels to the ceilings} | 2009/186 | . . {with arrangements for damping vibration} |
| 9/02 | . having means for ventilation or vapour discharge | 9/20 | . . adjustable |
| 9/023 | . . {comprising drainage gutters for condensed water or grease} | 9/205 | . . . {by means of a resilient clip} |
| 2009/026 | . . {the supporting ceiling grid acting as air diffusers} | 9/22 | . Connection of slabs, {panels,} sheets or the like to the supporting construction |
| 9/04 | . comprising slabs, {panels,} sheets or the like | 9/225 | . . {with the slabs, panels, sheets or the like hanging at a distance below the supporting construction} |
| 9/0407 | . . {being stiff and curved} | 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} |
| 9/0414 | . . {being foldable, curvable or rollable} | 9/241 | . . . {with the slabs, panels, sheets or the like positioned on the upperside of the horizontal flanges of the supporting construction} |
| 9/0421 | . . {comprising ducts} | 9/242 | {with separate retaining elements} |
| 9/0428 | . . {having a closed frame around the periphery} | 9/244 | {comprising sealing means between the supporting construction and the slabs, panels, sheets or the like} |
| 9/0435 | . . {having connection means at the edges} | 9/245 | . . . {by means of screws, bolts or clamping strips held against the underside of the supporting construction (E04B 9/26 takes precedence)} |
| 9/0442 | . . {having a honeycomb core} | 9/247 | . . . {by means of sliding or pivoting locking elements, held against the underside of the supporting construction} |
| 9/045 | . . {being laminated} | 9/248 | . . . {by means of permanent magnetic force held against the underside of the supporting construction} |
| 9/0457 | . . {having closed internal cavities} | 9/26 | . . . by means of snap action of elastically deformable elements {held against the underside of the supporting construction} |
| 9/0464 | . . {having irregularities on the faces, e.g. holes, grooves} | 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 |
| 9/0471 | . . {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} | | |

E04B

- 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](#) takes precedence; lighting [F21](#))
- 9/34 . {Grid-like or} open-work ceilings, e.g. lattice type {box-like modules, acoustic baffles} ([E04B 9/30](#) takes precedence)
- 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}

INDEXING SCHEME ASSOCIATED WITH E04B 1/00 - E04B 9/00, RELATING TO MATERIAL CONSTITUTION OF SLABS, SHEETS OR THE LIKE

- 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