

CPC**COOPERATIVE PATENT CLASSIFICATION****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 the underside of the load-carrying ceiling structure or roof structure.

WARNING

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

[E04B 1/682](#) covered by [E04B 1/68](#)

[E04B 1/684](#) covered by [E04B 1/68](#)

[E04B 1/686](#) covered by [E04B 1/68](#)

Guidance heading:**E04B 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)

[E04B 1/0007](#)

. {Base structures; Cellars }

[E04B 1/0015](#)

.. {Cellars constructed from prefabricated units }

[E04B 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](#)) }

[E04B 1/003](#)

. { Balconies; Decks }

[E04B 1/0038](#)

.. {Anchoring devices specially adapted therefor with means for preventing cold bridging }

[E04B 1/0046](#)

. {Loggias }

[E04B 2001/0053](#)

. Buildings characterised by their shape or layout grid

[E04B 2001/0061](#)

.. Buildings with substantially curved horizontal cross-section, e.g. circular

[E04B 2001/0069](#)

.. Prismatic shaped buildings with substantially triangular vertical cross-section

[E04B 2001/0076](#)

.. Buildings with specific right-angled horizontal layout grid

[E04B 2001/0084](#)

.. Buildings with non right-angled horizontal layout grid, e.g. triangular or hexagonal

- E04B 2001/0092 . . . Small buildings with hexagonal or similar horizontal cross-section
- E04B 1/02 . Structures consisting primarily of load-supporting, block-shaped, or slab-shaped elements ([E04B 1/32 to E04B 1/36 take precedence](#))
- E04B 1/04 . . the elements consisting of concrete, e.g. reinforced concrete, or other stone-like material
- E04B 1/043 . . . {Connections specially adapted therefor }
- E04B 1/046 { using reinforcement loops protruding from the elements }
- E04B 1/06 . . . the elements being prestressed
- E04B 1/08 . . the elements consisting of metal
- E04B 1/10 . . the elements consisting of wood
- E04B 1/12 . . the elements consisting of other material
- E04B 1/14 . . the elements being composed of two or more materials ([of reinforced concrete E04B 1/04](#))
- E04B 1/16 . Structures made from masses, e.g. of concrete, cast or similarly formed in situ with or without making use of additional elements, such as permanent forms, substructures to be coated with load-bearing material ([E04B 1/32 to E04B 1/36 take precedence](#))
- E04B 1/161 . . {with vertical and horizontal slabs, both being partially cast in situ }
- E04B 1/162 . . . {with a central core, used as form, in order to form a continuous concrete shell }
- E04B 1/163 . . {with vertical and horizontal slabs, only the vertical slabs being partially cast in situ ([E04B 2/86 takes precedence](#)) }
- E04B 1/164 . . {with vertical and horizontal slabs, only the horizontal slabs being partially cast in situ }
- E04B 1/165 . . {with elongated load-supporting parts, cast in situ; [E04B 1/161](#), [E04B 1/163](#) and [E04B 1/164 take precedence](#) }
- E04B 1/166 . . {with curved surfaces, at least partially cast in situ in order to make a continuous concrete shell structure ([E04B 1/169 takes precedence](#)) }
- E04B 1/167 . . {with permanent forms made of particular materials, e.g. layered products }
- E04B 1/168 . . . {flexible }
- E04B 1/169 {inflatable }
- E04B 1/18 . Structures comprising elongated load-supporting parts, e.g. columns, girders, skeletons ([E04B 1/32 to E04B 1/36 take precedence](#); elongated load-supporting parts as elements, trusses, truss-like structures [E04C 3/00](#))
- E04B 1/185 . . {Connections not covered by [E04B 1/21](#) and [E04B 1/2403](#), e.g. connections between structural parts of different material }
- E04B 1/19 . . Three-dimensional framework structures {folded structures and grid-like formations acting as shell structures [E04B 7/10](#) }
- E04B 1/1903 . . . { Connecting nodes specially adapted therefor }
- E04B 1/1906 {with central spherical, semispherical or polyhedral connecting element }
- E04B 1/1909 {with central cylindrical connecting element }
- E04B 1/1912 {with central cubical connecting element }

NOTE

Subgroup [E04B 1/19](#) takes precedence over subgroups [E04B 1/20](#) to [E04B 1/30](#)

E04B 2001/1915	.....	with strut engaging means at the edges of the cube
E04B 2001/1918	....	with connecting nodes having flat radial connecting surfaces
E04B 2001/1921	....	with connecting nodes having radial connecting stubs
E04B 2001/1924	...	Struts specially adapted therefor
E04B 2001/1927	....	of essentially circular cross section
E04B 2001/193	.....	with flattened connecting parts, e.g. ends
E04B 2001/1933	....	of polygonal, e.g. square, cross section
E04B 2001/1936	....	Winged profiles, e.g. with a L-, T-, U- or X-shaped cross section
E04B 2001/1939	....	Inflatable struts
E04B 2001/1942	....	Struts adjustable in length
E04B 2001/1945	....	Wooden struts
E04B 2001/1948	....	Concrete struts
E04B 2001/1951	....	uninterrupted struts situated in the outer planes of the framework
E04B 2001/1954	....	uninterrupted struts connecting alternately with the outer planes of the framework, e.g. zig-zagging struts
E04B 2001/1957	...	Details of connections between nodes and struts
E04B 2001/196	....	Screw connections with axis parallel to the main axis of the strut
E04B 2001/1963	....	Screw connections with axis at an angle, e.g. perpendicular, to the main axis of the strut
E04B 2001/1966	....	Formlocking connections other than screw connections
E04B 2001/1969	.....	Ball and socket type connection
E04B 2001/1972	....	Welded or glued connection
E04B 2001/1975	...	Frameworks where the struts are directly connected to each other, i.e. without interposed connecting nodes or plates
E04B 2001/1978	...	Frameworks assembled from preformed subframes, e.g. pyramids
E04B 2001/1981	...	characterised by the grid type of the outer planes of the framework
E04B 2001/1984	....	rectangular, e.g. square, grid
E04B 2001/1987	....	triangular grid
E04B 2001/199	...	Details of roofs, floors or walls supported by the framework
E04B 2001/1993	...	Details of framework supporting structure, e.g. posts or walls
E04B 2001/1996	...	Tensile-integrity structures, i.e. structures comprising compression struts connected through flexible tension members, e.g. cables
E04B 1/20	..	the supporting parts consisting of concrete, e.g. reinforced concrete, or other stonelike material
E04B 1/21	...	Connections specially adapted therefor
E04B 1/215	....	{comprising metallic plates or parts }
E04B 1/22	...	with parts being prestressed
E04B 1/24	..	the supporting parts consisting of metal
E04B 1/2403	...	{Connection details of the elongated load-supporting parts }
E04B 2001/2406	....	Connection nodes
E04B 2001/2409	....	Hooks, dovetails or other interlocking connections
E04B 2001/2412	.....	Keyhole connections
E04B 2001/2415	....	Brackets, gussets, joining plates
E04B 2001/2418	....	Details of bolting

E04B 2001/2421	....	Socket type connectors
E04B 2001/2424	....	Clamping connections other than bolting or riveting
E04B 2001/2427	....	using adhesives or hardening masses
E04B 2001/243	....	Assembling by non resilient deformation other than riveting
E04B 2001/2433	....	using a removable key
E04B 2001/2436	....	Snap-fit connections
E04B 2001/2439	....	Adjustable connections, e.g. using elongated slots or threaded adjustment elements
E04B 2001/2442	....	Connections with built-in weakness points
E04B 2001/2445	....	Load-supporting elements with reinforcement at the connection point other than the connector
E04B 2001/2448	....	Connections between open section profiles
E04B 2001/2451	....	Connections between closed section profiles
E04B 2001/2454	....	Connections between open and closed section profiles
E04B 2001/2457	....	Beam to beam connections
E04B 2001/246	....	Post to post connections
E04B 2001/2463	....	Connections to foundations
E04B 2001/2466	...	Details of the elongated load-supporting parts
E04B 2001/2469	....	Profile with an array of connection holes
E04B 2001/2472	....	Elongated load-supporting part formed from a number of parallel profiles
E04B 2001/2475	....	Profile with an undercut grooves for connection purposes
E04B 2001/2478	....	Profile filled with concrete
E04B 2001/2481	...	Details of wall panels
E04B 2001/2484	...	Details of floor panels or slabs
E04B 2001/2487	...	Portico type structures
E04B 2001/249	...	Structures with a sloping roof
E04B 2001/2493	...	Structures with a vaulted roof
E04B 2001/2496	...	Shear bracing therefor
E04B 1/26	..	the supporting parts consisting of wood
E04B 1/2604	...	{ Connections specially adapted therefor (shear dowels E04B 1/486 , E04B 1/49) }
E04B 1/2608	....	{Connectors made from folded sheet metal (E04B 1/2612 takes precedence) }
E04B 1/2612	....	{Joist hangers }
E04B 2001/2616	....	Hinged connections of wooden members
E04B 2001/262	....	Connection node with interlocking of specially shaped wooden members, e.g. puzzle type connection
E04B 2001/2624	.....	with dovetail-type connections
E04B 2001/2628	....	Interlocking connectors, e.g. with hooks or dovetails, added to the elongated wooden members
E04B 2001/2632	.....	with dovetail-type connections
E04B 2001/2636	.....	with connectors located in slots of the wooden members
E04B 2001/264	....	Glued connections
E04B 2001/2644	....	Brackets, gussets or joining plates (E04B 2001/2628 takes precedence)

E04B 2001/2648	.....	located in slots of the elongated wooden members
E04B 2001/2652	....	Details of nailing, screwing, or bolting
E04B 2001/2656	.....	Bent or curved bolts
E04B 2001/266	....	Socket type connectors
E04B 2001/2664	....	using a removable key
E04B 2001/2668	....	for members with a round cross-section
E04B 2001/2672	....	for members formed from a number of parallel sections
E04B 2001/2676	....	Connector nodes (E04B 2001/262 takes precedence)
E04B 2001/268	....	Connection to foundations
E04B 2001/2684	.....	with metal connectors
E04B 2001/2688	.....	self adjusting, e.g. for compensation of shrinkage
E04B 2001/2692	....	End to end connections of elongated members along their common longitudinal axis
E04B 2001/2696	...	Shear bracing
E04B 1/28	..	the supporting parts consisting of other material
E04B 1/30	..	the supporting parts being composed of two or more materials; Composite steel and concrete constructions (of reinforced concrete E04B 1/20)
E04B 1/32	.	Arched structures; Vaulted structures; Folded structures ({ E04B 1/34378 takes precedence; } vaulted roofs E04B 7/08)
E04B 1/3205	..	{Structures with a longitudinal horizontal axis, e.g. cylindrical or prismatic structures }
E04B 1/3211	..	{Structures with a vertical rotation axis or the like, e.g. semi-spherical structures }
E04B 2001/3217	..	Auxilliary supporting devices used during erection of the arched structures
E04B 2001/3223	..	Theorical polygonal geometry therefor
E04B 2001/3229	..	constructed using a boom
E04B 2001/3235	..	having a grid frame
E04B 2001/3241	...	Frame connection details
E04B 2001/3247	....	Nodes
E04B 2001/3252	...	Covering details
E04B 2001/3258	..	comprised entirely of a single self-supporting panel
E04B 2001/3264	...	hardened in-situ
E04B 2001/327	..	comprised of a number of panels or blocs connected together forming a self-supporting structure
E04B 2001/3276	...	Panel connection details
E04B 2001/3282	....	Panels connected together exclusively at their corners
E04B 2001/3288	...	Panel frame details, e.g. flanges of steel sheet panels
E04B 2001/3294	..	with a faceted surface
E04B 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)
E04B 1/3404	..	{supported by masts or tower-like structures }
E04B 1/3408	..	{Extraordinarily-supported small buildings }

- E04B 1/3412 . . . {mainly supported by a central column or footing ([E04B 1/3416](#) takes precedence) }
- E04B 1/3416 . . {Structures comprising mainly a central support column and a cantilevered roof }
- E04B 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](#))
- E04B 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](#) }
- E04B 1/34305 . . {telescopic }
- E04B 1/3431 . . . {with only one level of nesting }
- E04B 1/34315 . . {characterised by separable parts }
- E04B 1/34321 . . . {mainly constituted by panels }
- E04B 1/34326 . . . {mainly constituted by longitudinal elements }
- E04B 1/34331 . . . {mainly constituted by threedimensional elements }
- E04B 1/34336 . . {Structures movable as a whole }
- E04B 1/34342 . . . {Skirtings therefor }
- E04B 1/34347 . . . {Anchoring means therefor }
- E04B 1/34352 . . . {Base structures or supporting means therefor }
- E04B 1/34357 . . {Foldable or retractable structures }
- E04B 1/34363 . . . {with provisions to raise or lower the whole structure }
- E04B 1/34368 . . . {Wheeled arch-type structures }
- E04B 1/34373 {collapsible }
- E04B 1/34378 . . . {Structures deriving their rigidity from concertina folds }
- E04B 1/34384 . . {Assembling details for foldable, separable, collapsible or retractable structures }
- E04B 2001/34389 . . Set of building elements forming a self-contained package for transport before assembly
- E04B 2001/34394 . . Vertical telescopic structures
- E04B 1/344 . . with hinged parts
- E04B 1/3441 . . . {with articulated bar-shaped elements }
- E04B 1/3442 . . . {folding out from a core cell }
- E04B 1/3444 {with only lateral unfolding }
- E04B 1/3445 . . . {foldable in a flat stack of parallel panels }
- E04B 1/3447 {Portal- or saddle-shaped structures }
- E04B 1/3448 . . . {with rotating shell-forming segments }
- E04B 1/346 . . Rotary buildings; buildings with rotary units, e.g. rooms
- E04B 1/3465 . . . { with adapted utilities connections, e.g. for water or electricity }
- E04B 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
- E04B 1/34807 . . {Elements integrated in a skeleton }
- E04B 1/34815 . . {Elements not integrated in a skeleton }
- E04B 1/34823 . . . {the supporting structure consisting of concrete }

- E04B 1/3483 . . . {the supporting structure consisting of metal }
- E04B 1/34838 . . . {the supporting structure consisting of wood }
- E04B 1/34846 . . . {the supporting structure consisting of other specified material, e.g. of plastics }
- E04B 1/34853 . . . {the supporting structure being composed of two or more materials }
- E04B 1/34861 . . . {particular arrangement of habitable rooms or their component parts; modular co-ordination }
- E04B 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](#)) }
- E04B 2001/34876 . . with a sloping or barrel roof
- E04B 2001/34884 . . . creating a living space between several units
- E04B 2001/34892 . . Means allowing access to the units, e.g. stairs or cantilevered gangways
- E04B 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 measure on existing buildings [E04G 23/00](#))
- E04B 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) }
- E04B 1/3511 . . {Lift-slab; characterised by a purely vertical lifting of floors or roofs or parts thereof }
- E04B 1/3516 . . {characterised by erecting a vertical structure and then adding the floors from top to bottom }
- E04B 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) }
- E04B 1/3527 . . . {the structure being a roof }
- E04B 1/3533 . . {characterised by the raising of hingedly-connected building elements, e.g. arches, portal frames ([E04B 1/355](#) takes precedence) }
- E04B 1/3538 . . . {the elements being a floor slab with hingedly-connected wall panels }
- E04B 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) }
- E04B 1/355 . . {characterised by the tilting up of whole buildings or sections thereof, e.g. walls, portal frames }
- E04B 1/3555 . . { Constructions using straw bales }
- E04B 2001/3561 . . adding living space above existing structures
- E04B 2001/3566 . . mounting masonry against a forwork
- E04B 2001/3572 . . using templates or jigs to set out buildings or parts thereof
- E04B 2001/3577 . . prefabricating a building and moving it as a whole to the erection site
- E04B 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
- E04B 2001/3588 . . using special lifting or handling devices, e.g. gantries, overhead conveying rails
- E04B 2001/3594 . . . inflatable lifting or handling devices
- E04B 1/36 . . Bearings or like supports allowing movement (for bridges [E01D 19/04](#); buildings with-standing earthquakes [E04H 9/02](#))
- E04B 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 [E04B9/00](#). Joints not specially adapted for building construction, or of more general application, are classified in the appropriate subclasses, e.g. [F16B](#).

- [E04B 1/383](#) .. {Connection of concrete parts using adhesive materials, e.g. mortar or glue }
- [E04B 2001/386](#) .. Nailable or screwable inserts for foam panels
- [E04B 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](#))

WARNING

Group [E04B 1/40](#) is no longer used for the classification of new documents. The backlog of this group is in the process of being reorganised to group [E04B 1/41](#) and subgroups

- [E04B 2001/405](#) ... Brackets
- [E04B 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](#))
- [E04B 1/4107](#) {Longitudinal elements having an open profile, with the opening parallel to the concrete or masonry surface, i.e. anchoring rails }
- [E04B 1/4114](#) {Elements with sockets ([E04B 1/4107](#) takes precedence) }
- [E04B 1/4121](#) {with internal threads or non-adjustable captive nuts }
- [E04B 1/4128](#) {receiving adjustable or removal nuts }
- [E04B 1/4135](#) {receiving removal bolt heads ([E04B 1/415](#) takes precedence) }
- [E04B 1/4142](#) {with transverse hook- or loop-receiving parts ([E04B 1/415](#) takes precedence) }
- [E04B 1/415](#) {with captive and extendable anchoring parts, e.g. spring-loaded bolts, hanging rings }
- [E04B 1/4157](#) {Longitudinally-externally threaded elements extending from the concrete or masonry, e.g. anchoring bolt with embedded head }
- [E04B 1/4164](#) {with an adjustment sleeve }
- [E04B 1/4171](#) {Nailable or non-threaded screwable elements (dowels [F16B 13/00](#)) }
- [E04B 1/4178](#) {Masonry wall ties (with insulation-layer locating devices [E04B 1/7616](#); replacing or adding wall ties [E04G 23/0222](#)) }
- [E04B 1/4185](#) {for cavity walls with both wall leaves made of masonry (spacers for permanent forms [E04B 2/86](#)) }
- [E04B 2001/4192](#) attached to concrete reinforcing elements, e.g. rods or wires
- [E04B 1/48](#) ... Dowels, i.e. members adapted to penetrate the surfaces of two parts and to take the shear stresses
- [E04B 1/483](#) { Shear dowels to be embedded in concrete }

E04B 1/486	....	{ Shear dowels for wood (E04B 1/49 takes precedence) }
E04B 1/49	....	with self-penetrating parts, e.g. claw dowels { (nail plates F16B 15/0023) }
E04B 1/54	..	Joints substantially without separate connecting elements, e.g. jointing by inter-engagement (welded, glued, or the like joints, in general F16B)
E04B 1/58	..	of bar-shaped building elements { (framework connections E04B 1/21 , E04B 1/2403 , E04B 1/2604) }
E04B 1/5806	...	{with a cross-section having an open profile }
E04B 1/5812	....	{of substantially I - or H - form }
E04B 1/5818	....	{of substantially U - form }
E04B 1/5825	...	{with a closed cross-section }
E04B 1/5831	....	{of substantially rectangular form }
E04B 1/5837	....	{of substantially circular form }
E04B 1/5843	.....	{with ends provided with protuberances }
E04B 1/585	.....	{with separate connection devices }
E04B 2001/5856	....	using the innerside thereof
E04B 2001/5862	...	Angularly adjustable connections without hinge pin
E04B 2001/5868	...	Hinged connections
E04B 2001/5875	...	using exterior clamping plates or shells
E04B 2001/5881	...	using an undercut groove, e.g. dovetail groove
E04B 2001/5887	...	using connectors with sockets
E04B 2001/5893	...	Puzzle type connections
E04B 1/61	..	of slab-shaped building elements with each other
E04B 1/6104	...	{the overlapping ends of the slabs connected together }
E04B 1/6108	...	{the frontal surfaces of the slabs connected together }
E04B 1/6112	....	{by clamping, e.g. friction, means on lateral surfaces }
E04B 1/6116	....	{by locking means on lateral surfaces }
E04B 1/612	....	{by means between frontal surfaces }
E04B 1/6125	.....	{with protrusions on the one frontal surface co-operating with recesses in the other frontal surface }
E04B 1/6129	.....	{the connection made by expansion }
E04B 1/6133	.....	{the connection made by friction-grip }
E04B 1/6137	.....	{the connection made by formlocking }
E04B 1/6141	.....	{the connection made by an additional locking key }
E04B 1/6145	.....	{with recesses in both frontal surfaces co-operating with an additional connecting element }
E04B 1/615	.....	{the connection made by expansion }
E04B 1/6154	.....	{the connection made by friction-grip }
E04B 1/6158	.....	{the connection made by formlocking }
E04B 1/6162	.....	{the connection made by an additional locking key }
E04B 1/6166	.....	{with protrusions on both frontal surfaces }
E04B 1/617	.....	{with one protrusion on each frontal surface }
E04B 1/6175	.....	{with two or more protrusions on each frontal surface }
E04B 1/6179	.....	{with protrusions and recesses on each frontal surface }

- E04B 1/6183 {with rotatable locking means co-operating with a recess (similar devices for sliding doors [E05B 65/0817](#)) }
- E04B 1/6187 {by means on top and/or bottom surfaces of the slabs }
- E04B 2001/6191 by means on the corners of the slabs
- E04B 2001/6195 the slabs being connected at an angle, e.g. forming a corner

- E04B 1/62 Insulation or other protection; Elements or use of specified material therefor (chemical compositions [C01](#) to [C11](#) ; implements for applying insulation or sealings [E04F 21/00](#); buildings to withstand or to provide protection against external undesired influences [E04H 9/00](#); sealing pipes in walls or partitions [F16L 5/02](#); shielding against dangerous radiation [G21F](#) ; constructions of particular parts of buildings, see the relevant groups for those parts)

- E04B 1/625 { Sheets or foils allowing passage of water vapor but impervious to liquid water; house wraps }

- E04B 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](#)

- E04B 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](#)) }

- E04B 1/644 {Damp-proof courses (in combination with lintels [E04C 3/02](#)) }

- E04B 1/646 {obtained by removal and replacement of a horizontal layer of an existing wall }

- E04B 1/648 {obtained by injection or infiltration of water-proofing agents into an existing wall }

- E04B 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)

- E04B 1/665 { Sheets or foils impervious to water and water vapor }

- E04B 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](#))

- E04B 1/6801 {Fillings therefor }

- E04B 1/6803 {Joint covers ([E04B 1/6815](#) takes precedence) }

- E04B 1/6804 {specially adapted for floor parts }

- E04B 1/6806 {Waterstops ([E04B 1/6807](#) takes precedence) }

- E04B 1/6807 {Expansion elements for parts cast in situ }

- E04B 1/6809 {Reverse side strips }

- E04B 1/681 {for free moving parts }

E04B 1/6812	....	{Compressable seals of solid form }
E04B 1/6813	....	{Compressable seals of hollow form (E04B 1/6816 takes precedence) }
E04B 1/6815	....	{Expansion elements specially adapted for wall or ceiling parts }
E04B 1/6816	....	{Porous tubular seals for injecting sealing material (filling of cracks in existing buildings E04G 23/02) }
E04B 2001/6818	....	Joints with swellable parts
E04B 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)
E04B 1/7007	...	{ by using electricity, e.g. electro-osmosis (electrochemical desalination or re-alkalisation of reinforced concrete C04B 41/00) }
E04B 1/7015	...	{by heating the ambient air }
E04B 1/7023	...	{by collecting water in basements }
E04B 1/703	...	{ Evacuating water from walls made from hollow bricks }
E04B 1/7038	...	{ Evacuating water from cavity walls, e.g. by using weep holes }
E04B 1/7046	....	{ using trays }
E04B 1/7053	....	{ Grills for weep holes }
E04B 1/7061	....	{ Devices for preventing blockage of weep holes, e.g. a blockage caused by falling mortar }
E04B 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) }
E04B 1/7076	....	{Air vents for walls }
E04B 1/7084	....	{with Knappen systems, i.e. atmospheric siphons }
E04B 1/7092	....	{Temporary mechanical ventilation of damp layers, e.g. insulation of a floating floor }
E04B 1/72	..	Pest control (by keeping dry E04B 1/70 ; impregnation of wood or like materials B27K)
E04B 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 to E04C 3/00 ; chiefly adapted for surface covering E04F 13/00 ; as underlayers for floor coverings E04F 15/18 ; closures for wall or like openings E06B)
E04B 2001/741	...	Insulation elements with markings, e.g. identification or cutting template
E04B 2001/742	...	Use of special materials; Materials having special structures or shape
E04B 2001/743	....	Animal products, e.g. wool, feathers
E04B 2001/745	....	Vegetal products, e.g. plant stems, barks
E04B 2001/746	....	Recycled materials, e.g. made of used tires, bumpers or newspapers
E04B 2001/747	....	Corrugated materials
E04B 2001/748	....	Honeycomb materials
E04B 1/76	...	specifically with respect to heat only (heat insulation in general F16L 59/00)
E04B 1/7604	....	{fillings for cavity walls }
E04B 1/7608	....	{comprising a prefabricated insulating layer, disposed between two other layers or panels }
E04B 1/7612	.....	{in combination with an air space }

E04B 1/7616	.....	{with insulation-layer locating devices combined with wall ties }
E04B 1/762	....	{ Exterior insulation of exterior walls }
E04B 1/7625	.....	{ Details of the adhesive connection of the insulation to the wall }
E04B 1/7629	.....	{ Details of the mechanical connection of the insulation to the wall }
E04B 1/7633	.....	{ Dowels with enlarged insulation retaining head }
E04B 1/7637	.....	{ Anchoring of separate elements through the lining to the wall }
E04B 1/7641	.....	{ Elements for window or door openings, or for corners of the building }
E04B 1/7645	.....	{ with ventilation means for the insulation }
E04B 1/765	.....	{ Bottom edge finishing profile }
E04B 1/7654	....	{comprising an insulating layer, disposed between two longitudinal supporting elements, e.g. to insulate ceilings }
E04B 1/7658	.....	{comprising fiber insulation, e.g. as panels or loose filled fibres }
E04B 1/7662	.....	{comprising fiber blankets or batts }
E04B 1/7666	.....	{Connection of blankets or batts to the longitudinal supporting elements }
E04B 1/767	.....	{Blankets or batts with connecting flanges }
E04B 1/7675	....	{ Insulating linings for the interior face of exterior walls }
E04B 2001/7679	....	Means preventing cold bridging at the junction of an exterior wall with an interior wall or a floor
E04B 2001/7683	....	Fibrous blankets or panels characterised by the orientation of the fibres
E04B 2001/7687	....	Crumble resistant fibrous blankets or panels using adhesives or meltable fibres
E04B 2001/7691	....	Heat reflecting layers or coatings
E04B 2001/7695	....	Panels with adjustable width
E04B 1/78	....	Heat insulating elements { E04B 1/7662 takes precedence }
E04B 1/80	.....	slab-shaped
E04B 1/803	.....	{with vacuum spaces included in the slab }
E04B 1/806	.....	{with air or gas pockets included in the slab }
E04B 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)
E04B 1/8209	....	{sound absorbing devices (E04B 1/8218 , E04B 1/8227 take precedence) }
E04B 1/8218	....	{soundproof enclosures }
E04B 1/8227	....	{screens (E04B 2/74 takes precedence; for road or railway traffic E01F) ; Arrangements of sound-absorbing elements, e.g. baffles }
E04B 1/8236	.....	{Stage shells }
E04B 2001/8245	....	Machines for manufacturing, shaping, piercing or filling sound insulating elements
E04B 2001/8254	....	Soundproof supporting of building elements, e.g. stairs, floor slabs or beams, on a structure
E04B 2001/8263	....	Mounting of acoustical elements on supporting structure, e.g. framework or wall surface
E04B 2001/8272	.....	Resiliently mounted wall cladding acting as a diaphragmatic sound damper
E04B 2001/8281	.....	Flat elements mounted parallel to a supporting surface with an

		acoustically active air gap between the elements and the mounting surface
E04B 2001/829	.....	Flat elements mounted at an angle, e.g. right angle, to the supporting surface
E04B 1/84	....	Sound-absorbing elements
E04B 1/8404	.....	{block-shaped }
E04B 1/8409	.....	{sheet-shaped }
E04B 2001/8414	....	with non-planar face, e.g. curved, egg-crate shaped
E04B 2001/8419	.....	Acoustical cones or the like, e.g. for anechoic chambers
E04B 2001/8423	....	Tray or frame type panels or blocks, with or without acoustical filling
E04B 2001/8428	.....	containing specially shaped acoustical bodies, e.g. funnels, egg-crates, fanfolds
E04B 2001/8433	.....	with holes in their face
E04B 2001/8438	.....	Slot shaped holes
E04B 2001/8442	.....	Tray type elements
E04B 2001/8447	.....	with two facing trays
E04B 2001/8452	.....	with peripheral frame members
E04B 2001/8457	....	Solid slabs or blocks
E04B 2001/8461	.....	layered
E04B 2001/8466	.....	with an intermediate layer formed of lines or dots of elastic material
E04B 2001/8471	.....	with non-planar interior transition surfaces between layers, e.g. faceted, corrugated
E04B 2001/8476	.....	with acoustical cavities, with or without acoustical filling
E04B 2001/848	.....	the cavities opening onto the face of the element
E04B 2001/8485	.....	the opening being restricted, e.g. forming Helmholtz resonators
E04B 2001/849	.....	Groove or slot type openings
E04B 2001/8495	.....	the openings going through from one face to the other face of the element
E04B 1/86	.....	slab-shaped
E04B 1/88	...	Insulating elements for both heat and sound
E04B 1/90	....	slab-shaped
E04B 1/92	..	Protection against other undesired influences or dangers (buildings providing protection against external dangers E04H 9/00 ; shielding against dangerous radiation G21F)
E04B 2001/925	...	Protection against harmful electro-magnetic or radio-active radiations, e.g. X-rays
E04B 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 })
E04B 1/941	....	{Building elements specially adapted therefor }
E04B 1/942	.....	{slab-shaped }

E04B 1/943	.....	{elongated }
E04B 1/944	.....	{covered with fire-proofing material }
E04B 1/945	....	{Load-supporting structures specially adapted therefor }
E04B 1/946	....	{Protection against smoke or toxic gases }
E04B 1/947	....	{by closing openings in walls or the like in the case of fire (fire-proof doors E06B 5/16) }
E04B 1/948	....	{Fire-proof sealings or joints (for doors or windows E06B 5/164) }
E04B 2001/949	....	Construction elements filled with liquid, e.g. water, either permanently or only in case of fire
E04B 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 earth-quake or the like, shelters, arrangements of splintercatching walls E04H 9/00)
E04B 1/985	....	{involving active or passive dynamic mass damping systems }
E04B 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)
E04B 1/994	..	{Acoustical surfaces with adjustment mechanisms }

E04B 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](#))

E04B 2/02	.	built-up from layers of building elements
E04B 2002/0202	..	Details of connections
E04B 2002/0204	...	Non-undercut connections, e.g. tongue and groove connections
E04B 2002/0206	....	of rectangular shape
E04B 2002/0208	....	of trapezoidal shape
E04B 2002/021	....	of triangular shape
E04B 2002/0213	....	of round shape
E04B 2002/0215	....	with separate protrusions
E04B 2002/0217	.....	of prismatic shape
E04B 2002/0219	.....	of pyramidal shape
E04B 2002/0221	.....	of conical shape
E04B 2002/0223	.....	of cylindrical shape
E04B 2002/0226	....	with tongues and grooves next to each other on the end surface
E04B 2002/0228	....	with tongues next to each other on one end surface and grooves next to each other on opposite end surface
E04B 2002/023	....	with rabbets, e.g. stepped
E04B 2002/0232	...	Undercut connections, e.g. using undercut tongues and grooves
E04B 2002/0234	....	Angular dovetails
E04B 2002/0236	.....	tapered, i.e. dovetail narrows in the direction of tongue or groove
E04B 2002/0239	....	Round dovetails
E04B 2002/0241	.....	tapered, i.e. dovetail narrows in the direction of tongue or groove

E04B 2002/0243	...	Separate connectors or inserts, e.g. pegs, pins or keys
E04B 2002/0245	....	Pegs or pins
E04B 2002/0247	....	Strips or bars
E04B 2002/025	....	U-shaped, e.g. brackets
E04B 2002/0252	....	Dovetail keys
E04B 2002/0254	....	Tie rods
E04B 2002/0256	..	Special features of building elements
E04B 2002/0258	...	Gripping or handling aids
E04B 2002/026	...	Splittable building elements
E04B 2002/0263	...	Building elements for making angled walls
E04B 2002/0265	...	Building elements for making arcuate walls
E04B 2002/0267	...	Building elements with the appearance of several bricks
E04B 2002/0269	...	Building elements with a natural stone facing
E04B 2002/0271	...	Building elements with the appearance of rock layers
E04B 2002/0273	...	Adhesive layers other than mortar between building elements
E04B 2002/0276	....	Separate layers or strips
E04B 2002/0278	....	forming a unity with the building elements
E04B 2002/028	...	Spacers between building elements
E04B 2002/0282	....	Separate spacers
E04B 2002/0284	....	forming a unity with the building elements
E04B 2002/0286	...	Building elements with coatings
E04B 2002/0289	...	Building elements with holes filled with insulating material
E04B 2002/0291	....	loose material
E04B 2002/0293	....	solid material
E04B 2002/0295	..	of which the width is equal to the wall thickness
E04B 2002/0297	..	of which the width is less than the wall thickness
E04B 2/04	..	Walls having neither cavities between, nor in, the solid elements
E04B 2/06	...	using elements having specially-designed means for stabilising the position
E04B 2/08	....	by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
E04B 2/10	....	by filling material with or without reinforcements in small channels in, or in grooves between, the elements
E04B 2/12	...	using elements having a general shape differing from that of a parallelepiped
E04B 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
E04B 2/16	...	using elements having specially-designed means for stabilising the position
E04B 2/18	....	by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
E04B 2/20	....	by filling material with or without reinforcements in small channels in, or in grooves between, the elements
E04B 2/22	...	using elements having a general shape differing from that of a parallelepiped
E04B 2/24	...	the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams
E04B 2/26	...	the walls being characterised by fillings in all cavities in order to form a wall

- construction
- E04B 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
 - E04B 2/30 . . . using elements having specially designed means for stabilising the position; Spacers for cavity walls { (masonry wall ties [E04B 1/4178](#)) }
 - E04B 2/32 by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
 - E04B 2/34 by filling material with or without reinforcements in small channels in, or in grooves between, the elements
 - E04B 2/36 . . . using elements having a general shape differing from that of a parallelepiped
 - E04B 2/38 . . . the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams
 - E04B 2/40 . . . the walls being characterised by fillings in all cavities in order to form a wall construction
 - E04B 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
 - E04B 2/44 . . . using elements having specially-designed means for stabilising the position; Spacers for cavity walls { (masonry wall ties [E04B 1/4178](#)) }
 - E04B 2/46 by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
 - E04B 2/48 by filling material with or without reinforcements in small channels in, or in grooves between, the elements
 - E04B 2/50 . . . using elements having a general shape differing from that of a parallelepiped
 - E04B 2/52 . . . the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams
 - E04B 2/54 . . . the walls being characterised by fillings in all cavities in order to form a wall construction
 - E04B 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](#))
 - E04B 2/562 . . {with fillings between the load-bearing elongated members }
 - E04B 2002/565 . . with a brick veneer facing
 - E04B 2002/567 . . with posts or pillars made from a plurality of smaller prefabricated elements
 - E04B 2/58 . . with elongated members of metal
 - E04B 2/60 . . . characterised by special cross-section of the elongated members
 - E04B 2/62 the members being formed of two or more elements in side-by-side relationship
 - E04B 2/64 . . with elongated members of concrete
 - E04B 2/66 . . . characterised by special cross-section of the elongated members
 - E04B 2/68 . . . made by filling-up wall cavities ([E04B 2/24](#), [E04B 2/38](#), [E04B 2/52](#) take precedence)
 - E04B 2/70 . . with elongated members of wood
 - E04B 2/701 . . . {with integrated supporting and obturation function }
 - E04B 2/702 {with longitudinal horizontal elements ([E04B 2/704](#), [E04B 2/705](#) take precedence) }
 - E04B 2/703 {with longitudinal vertical elements }

E04B 2/704	....	{with longitudinal horizontal elements shorter than the length of a wall }
E04B 2/705	....	{with longitudinal horizontal elements placed between columns }
E04B 2/706	...	{with supporting function }
E04B 2/707	....	{obturation by means of panels }
E04B 2/708	....	{obturation by means of longitudinal elements with a convex external surface }
E04B 2/709	....	{obturation by means of longitudinal elements with a plane external surface }
E04B 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)
E04B 2/721	..	{connections specially adapted therefor }
E04B 2/723	..	{constituted of gypsum elements }
E04B 2002/725	...	Corner or angle connection details
E04B 2002/726	...	Clips for butt-joining plasterboards
E04B 2002/728	...	Butt-joining plasterboards in the space between two studs
E04B 2/74	.	Removable non-load-bearing partitions; Partitions with a free upper edge (framed panels E04C 2/38) {modular coordination }
E04B 2/7401	..	{assembled using panels without a frame or supporting posts, with or without upper or lower edge locating rails }
E04B 2/7403	...	{with special measures for sound or thermal insulation including fire protection }
E04B 2/7405	...	{with free upper edge, e.g. for use as office space dividers }
E04B 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) }
E04B 2/7409	...	{special measures for sound or thermal insulation, including fire protection }
E04B 2/7411	....	{ Details for fire protection }
E04B 2/7412	....	{ Posts or frame members specially adapted for reduced sound or heat transmission }
E04B 2/7414	....	{ Posts or frame members with projections for holding sound or heat insulating fillings }
E04B 2/7416	...	{with free upper edge, e.g. for use as office space dividers }
E04B 2002/7418	....	Accessories supported on the free upper edge, e.g. auxilliary panels, noise abatement devices
E04B 2002/742	....	Details of panel top cap
E04B 2/7422	....	{with separate framed panels without intermediary support posts }
E04B 2/7424	.....	{Glazing details }
E04B 2/7425	.....	{Details of connection of panels (E04B 2/7427 takes precedence) }
E04B 2/7427	.....	{with adjustable angular connection of panels }
E04B 2/7429	.....	{using flexible hinges }
E04B 2/7431	.....	{using hinges having two parallel rotation axes }
E04B 2/7433	....	{with panels and support posts }
E04B 2/7435	.....	{Glazing details }
E04B 2/7437	.....	{with panels hooked onto posts (E04B 2/7438 takes precedence) }
E04B 2/7438	.....	{with adjustable angular connection of panels to posts }

E04B 2/744	.....	{using angularly-spaced longitudinal grooves of the posts }
E04B 2/7442	.....	{hinged connections (E04B 2/7444 takes precedence) }
E04B 2/7444	.....	{panels hooked onto the rim or in a groove of circular posts }
E04B 2002/7446	....	Post-like profiles for connecting panels at an angle
E04B 2/7448	...	{with separate framed panels without intermediary posts, extending from floor to ceiling }
E04B 2/745	....	{Glazing details }
E04B 2/7451	....	{with false tongue joints }
E04B 2/7453	...	{with panels and support posts, extending from floor to ceiling }
E04B 2/7455	....	{Glazing details }
E04B 2/7457	....	{ with wallboards attached to the outer faces of the posts, parallel to the partition (E04B 2/7459 takes precedence) }
E04B 2/7459	....	{ with telescoping posts to compensate for floor or ceiling irregularities }
E04B 2002/7461	..	Details of connection of sheet panels to frame or posts
E04B 2002/7462	...	using resilient connectors, e.g. clips
E04B 2002/7464	....	clasping a flange of a profile
E04B 2002/7466	...	using hooks
E04B 2002/7468	...	using magnets
E04B 2002/747	...	using hook and loop-type fasteners
E04B 2002/7472	...	using adhesives
E04B 2002/7474	...	using releasable connectors actuatable with a key or a tool
E04B 2002/7475	...	using connectors with claws penetrating the sheet panels
E04B 2002/7477	...	Details of connections using screws or nails
E04B 2002/7479	..	Details of connection of flexible sheets to frame or posts
E04B 2002/7481	..	Locating rails with adjustable curvature
E04B 2002/7483	..	Details of furniture, e.g. tables or shelves, associated with the partitions
E04B 2002/7485	...	Load supports therefor placed between wall studs
E04B 2002/7487	..	Partitions with slotted profiles
E04B 2002/7488	..	Details of wiring
E04B 2002/749	..	Partitions with screw-type jacks
E04B 2002/7492	...	used in partitions extending from floor to ceiling
E04B 2002/7494	....	the jacks being located at the top or the side of the partition
E04B 2002/7496	..	using wedges to level or hold the partition in place
E04B 2002/7498	..	Partitions for clean rooms
E04B 2/76	..	with framework or posts of metal { (details of connections, thresholds or skirtings E04B 2/82) }
E04B 2/761	...	{L-connections }
E04B 2/762	...	{Cross connections }
E04B 2/763	....	{with one continuous profile, the perpendicular one passing continuously through the first one }
E04B 2/764	....	{with two interrupted profiles }
E04B 2/765	....	{with one continuous profile, the perpendicular one being interrupted }
E04B 2/766	...	{T-connections }

E04B 2/767	....	{Connections between wall studs and upper or lower locating rails }
E04B 2/768	.....	{ allowing vertical movement of upper rail with respect to the stud, e.g. by using slots in the rail or stud }
E04B 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) }
E04B 2/7809	....	{of single or multiple tubular form }
E04B 2/7818	.....	{of substantially rectangular form }
E04B 2/7827	.....	{ with all four sides of the profiles having substantially similar undercut grooves or connecting projections }
E04B 2/7836	.....	{ with only two sides of the profiles having substantially similar undercut grooves or connecting projections }
E04B 2/7845	.....	{of curved cross-section; e.g. circular }
E04B 2/7854	....	{of open profile }
E04B 2/7863	.....	{of substantially I - section with web perpendicular to plane of partition }
E04B 2/7872	.....	{of substantially H - section with flanges perpendicular to plane of partition }
E04B 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 }
E04B 2/789	.....	{ of substantially U- or C- section }
E04B 2/80	..	with framework or posts of wood
E04B 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 }
E04B 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 }
E04B 2/822	....	{Elastic connections, e.g. inflated joints }
E04B 2/824	....	{restrained elastically at one surface and inelastically at the opposing surface }
E04B 2/825	...	{ the connection between the floor and the ceiling being achieved without any restraining forces acting in the plane of the partition }
E04B 2/827	...	{Partitions constituted of sliding panels }
E04B 2/828	...	{ Connections between partitions and structural walls }
E04B 2/84	.	Walls made by casting, pouring, or tamping in situ (E04B 2/02 , E04B 2/56 take precedence; forms therefor E04G 11/06 ; working of concrete or similar masses able to be cast or poured in situ E04G 21/02)
E04B 2/842	..	{ by projecting or otherwise applying hardenable masses to the exterior of a form leaf }
E04B 2/845	...	{ the form leaf comprising a wire netting, lattice or the like }
E04B 2/847	...	{ the form leaf comprising an insulating foam panel }
E04B 2/86	..	made in permanent forms
E04B 2/8605	...	{without spacers }
E04B 2/8611	...	{with spacers being embedded in at least one form leaf }
E04B 2/8617	.....	{with spacers being embedded in both form leaves }
E04B 2/8623	...	{with spacers and at least one form leaf being monolithic }

- E04B 2/8629 {with both form leaves and spacers being monolithic }
- E04B 2/8635 . . . {with ties attached to the inner faces of the forms ([E04B 2/8611](#) and [E04B 2/8623](#) take precedence) }
- E04B 2/8641 {using dovetail-type connections }
- E04B 2/8647 . . . {with ties going through the forms }
- E04B 2/8652 . . . {with ties located in the joints of the forms }
- E04B 2/8658 . . . { using wire netting, a lattice or the like as form leaves }
- E04B 2/8664 . . . {using flexible material as form leaves ([E04B 2/8658](#) takes precedence) }
- E04B 2002/867 . . . Corner details
- E04B 2002/8676 . . . Wall end details
- E04B 2002/8682 . . . Mixed technique using permanent and reusable forms
- E04B 2002/8688 . . . Scaffoldings or removable supports therefor
- E04B 2002/8694 . . . with hinged spacers allowing the formwork to be collapsed for transport

- E04B 2/88 . . Curtain walls { ([fixing of glass panes E06B 3/54](#)) }
- E04B 2/885 . . {comprising a supporting structure for flush mounted glazing panels }
- E04B 2/90 . . comprising panels directly attached to the structure { ([E04B 2/885](#) takes precedence) }
- E04B 2/92 . . . Sandwich-type panels
- E04B 2/94 . . . Concrete panels ([E04B 2/92](#) takes precedence)
- E04B 2/96 . . comprising panels attached to the structure through mullions or transoms { ([E04B 2/885](#) takes precedence) }
- E04B 2/962 . . . { with angles or corners in the curtain wall }
- E04B 2/965 . . . {Connections of mullions and transoms }
- E04B 2/967 . . . {Details of the cross-section of the mullions or transoms ([E04B 2/965](#) takes precedence) }

E04B 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](#))

- E04B 5/02 . . Load-carrying floor structures formed substantially of prefabricated units ([E04B 5/43](#) to [E04B 5/48](#) take precedence)
- E04B 5/023 . . { Separate connecting devices for prefabricated floor-slabs }
- E04B 5/026 . . { with beams or slabs of plastic }
- E04B 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)
- E04B 5/043 . . . { having elongated hollow cores }
- E04B 5/046 . . . { with beams placed with distance from another }
- E04B 5/06 . . . { with beams } placed against one another { optionally with pointing-mortar }
- E04B 5/08 . . assembled of block-shaped elements, e.g. hollow stones ([E04B 5/14](#) takes precedence; floors composed of reinforced brickwork [E04B 5/44](#))
- E04B 5/10 . . with metal beams or girders, e.g. with steel lattice girders ([E04B 5/14](#) takes precedence)
- E04B 5/12 . . with wooden beams ([E04B 5/14](#) takes precedence) {also means for supporting beams; (shores or struts [E04G 25/00](#)) }

- E04B 5/14 .. with beams or girders laid in two directions
- E04B 5/16 . Load-carrying floor structures wholly or partly cast or similarly formed in situ
 (E04B 5/43 to E04B 5/48 take precedence; floors merely characterised by the
 prefabricated elements E04C)
- E04B 5/17 .. Floor structures partly formed in situ
- E04B 2005/173 ... with permanent forms for the floor edges
- E04B 2005/176 ... with peripheral anchors or supports
- E04B 5/18 ... with stiffening ribs or other beam-like formations wholly cast between filling
 members
- E04B 5/19 the filling members acting as self-supporting permanent forms (E04B 5/21
 takes precedence)
- E04B 5/21 Cross-ribbed floors
- E04B 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 }
- E04B 2005/232 with special provisions for connecting wooden stiffening ribs or other wooden
 beam-like formations to the concrete slab
- E04B 2005/235 Wooden stiffening ribs or other wooden beam-like formations having a
 special form
- E04B 2005/237 Separate connecting elements
- E04B 5/26 with filling members between the beams (E04B 5/28 takes precedence)
- E04B 5/261 { Monolithic filling members }
- E04B 5/263 { with a flat lower surface (E04B 5/265 takes precedence) }
- E04B 5/265 { with one or more hollow cores }
- E04B 5/266 { Filling members covering the undersurface of the beams }
- E04B 5/268 { End filling members to be placed between the floor and the wall, e.g.
 thermal breaks }
- E04B 5/28 Cross-ribbed floors
- E04B 5/29 the prefabricated parts of the beams consisting wholly of metal (E04B 5/28
 takes precedence)
- E04B 5/32 .. Floor structures wholly cast in situ with or without form units or reinforcements
- E04B 2005/322 ... with permanent forms for the floor edges
- E04B 2005/324 ... with peripheral anchors or supports
- E04B 5/326 ... { with hollow filling elements }
- E04B 5/328 { the filling elements being spherical }
- E04B 5/36 ... with form units as part of the floor
- E04B 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 }
- E04B 5/40 with metal form-slabs
- E04B 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)
- E04B 5/44 . Floors composed of stones, mortar, and reinforcing elements (with inserts of glass
 E04B 5/46)

- E04B 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](#))
- E04B 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](#))
- E04B 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](#))
- E04B 7/02
 - with plane sloping surfaces, e.g. saddle roofs { (canopies [E04F 10/00](#)) } ([E04B 7/12](#) takes precedence)
- E04B 7/022
 - .. {consisting of a plurality of parallel similar trusses or portal frames }
- E04B 7/024
 - ... {the trusses or frames supporting load-bearing purlins, e.g. braced purlins (battens, supports for battens [E04D 12/00](#)) }
- E04B 7/026
 - .. { consisting of prefabricated modules, e.g. box-like or cell-like units ([E04B 7/24](#) takes precedence) }
- E04B 7/028
 - .. {consisting of structures of pyramidal or conical shape }
- E04B 7/04
 - .. supported by horizontal beams or the equivalent resting on the walls ([E04B 7/06](#) takes precedence)
- E04B 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](#)) }
- E04B 7/06
 - .. Constructions of roof intersections or hipped ends
- E04B 7/063
 - ... {Hipped ends }
- E04B 2007/066
 - for conservatories
- E04B 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](#))
- E04B 7/10
 - .. Shell structures, e.g. of hyperbolic-parabolic shape; Grid-like formations acting as shell structures; Folded structures {buildings [E04B 1/32](#) }
- E04B 7/102
 - ... {Shell structures }
- E04B 7/105
 - ... {Grid-like structures }
- E04B 7/107
 - ... {Folded structures }
- E04B 7/12
 - formed in bays, e.g. saw-tooth roofs ([E04B 7/10](#) takes precedence)
- E04B 7/14
 - Suspended roofs (suspended tents or canopies in general [E04H 15/04](#))
- E04B 7/16
 - Roof structures with movable roof parts (buildings for special purposes [E04H](#))
- E04B 7/163
 - .. { characterised by a pivoting movement of the movable roof parts ([E04B 7/166](#) takes precedence) }
- E04B 7/166
 - .. { characterised by a translation movement of the movable roof part, with or without additional movements }
- E04B 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](#))

- E04B 7/20 . Roofs consisting of self-supporting slabs, e.g. able to be loaded
- E04B 7/205 . . {the slabs having non-structural supports for roofing materials (for slabs having insulating properties [E04B 7/225](#)) }
- E04B 7/22 . . the slabs having insulating properties, e.g. laminated with layers of insulating material
- E04B 7/225 . . . {the slabs having non-structural supports for roofing materials }
- E04B 7/24 . . the slabs being collapsible {or retractable }, e.g. for transport

- E04B 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](#))**

- E04B 9/001 . {characterised by provisions for heat or sound insulation }
- E04B 9/003 . {with movable parts, e.g. pivoting panels, access doors }
- E04B 9/005 . {composed of imitation beams or beam coverings }
- E04B 9/006 . {with means for hanging lighting fixtures or other appliances to the framework of the ceiling }
- E04B 9/008 . {with means for connecting partition walls or panels to the ceilings }
- E04B 9/02 . having means for ventilation or vapour discharge
- E04B 9/023 . . { comprising drainage gutters for condensed water or grease }
- E04B 2009/026 . . the supporting ceiling grid acting as air diffusers

- E04B 9/04 . comprising slabs, { panels, } sheets or the like
- E04B 9/0407 . . { being stiff and curved }
- E04B 9/0414 . . { being foldable, curvable or rollable }
- E04B 9/0421 . . { comprising ducts }
- E04B 9/0428 . . { having a closed frame around the periphery }
- E04B 9/0435 . . { having connection means at the edges }
- E04B 9/0442 . . { having a honeycomb core }
- E04B 9/045 . . { being laminated }
- E04B 9/0457 . . { having closed internal cavities }
- E04B 9/0464 . . { having irregularities on the faces, e.g. holes, grooves }
- E04B 9/0471 . . { having a trapezoidal cross section }
- E04B 9/0478 . . { of the tray type }
- E04B 9/0485 . . . { containing a filling element }
- E04B 2009/0492 . . with fabrics tensioned on frames

- E04B 9/06 . characterised by constructional features of the supporting construction, { e.g. cross section or material of framework members }
- E04B 9/061 . . { supporting construction for curved ceilings }
- E04B 2009/062 . . Caps covering visible surfaces of the supporting construction

- E04B 9/064 .. { comprising extruded supporting beams }
- E04B 9/065 .. { comprising supporting beams having a folded cross-section }
- E04B 9/067 ... { with inverted T-shaped cross-section }
- E04B 9/068 { with double web }
- E04B 9/08 .. having the capability of expansion {e.g. in case of fire }
- E04B 9/10 .. Connections between parallel members of the supporting construction ([E04B 9/08 takes precedence](#))
- E04B 9/12 .. Connections between non-parallel members of the supporting construction ([E04B 9/08 takes precedence](#))
- E04B 9/122 ... {one member passing through the other member, both members laying at least partly in the same plane }
- E04B 9/125 { both members being continuous members }
- E04B 9/127 ... {one member being discontinuous and abutting against the other member }
- E04B 9/14 ... all the members being discontinuous and laying at least partly in the same plane
- E04B 9/16 ... the members lying in different planes

- E04B 9/18 . Means for suspending the supporting construction
- E04B 9/183 .. { having a lower side adapted to be connected to a channel of the supporting construction }
- E04B 2009/186 .. with arrangements for damping vibration
- E04B 9/20 .. adjustable
- E04B 9/205 ... { by means of a resilient clip }

- E04B 9/22 . Connection of slabs, { panels, } sheets or the like to the supporting construction
- E04B 9/225 .. { with the slabs, panels, sheets or the like hanging at a distance below the supporting construction }
- E04B 9/24 .. with the slabs, { panels, } sheets or the like positioned on { the upperside of }, or held against { the underside of the } horizontal flanges of the supporting construction { or accessory means connected thereto }
- E04B 9/241 ... { with the slabs, { panels, } sheets or the like positioned on the upperside of the horizontal flanges of the supporting construction }
- E04B 9/242 { with separate retaining elements }
- E04B 9/244 { comprising sealing means between the supporting construction and the slabs, panels, sheets or the like }
- E04B 9/245 ... [by means of screws, bolts or clamping strips held against the underside of the supporting construction ([E04B 9/26 takes precedence](#))]
- E04B 9/247 ... {by means of sliding or pivoting locking elements, held against the underside of the supporting construction }
- E04B 9/248 ... {by means of permanent magnetic force held against the underside of the supporting construction }
- E04B 9/26 ... by means of snap action of elastically deformable elements {held against the underside of the supporting construction }
- E04B 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

- E04B 9/30 . characterised by edge details of the ceiling; e.g. securing to an adjacent wall

- E04B 9/303 . . {for flexible tensioned membranes }
- E04B 9/306 . . . { Tensioning hand tools therefor }
- E04B 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)
- E04B 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)
- E04B 9/345 . . {consisting of non-parallel slats, e.g. grids }
- E04B 9/36 . . consisting of parallel slats
- E04B 9/363 . . . {the principal plane of the slats being horizontal }
- E04B 9/366 . . . {the principal plane of the slats being vertical }

Guidance heading:

E04B 2103/00 Material constitution of slabs, sheets or the like

- E04B 2103/02 . of ceramics, concrete or other stone-like material
- E04B 2103/04 . of plastics, fibrous material or wood
- E04B 2103/06 . of metal