

CPC COOPERATIVE PATENT CLASSIFICATION

E04G SCAFFOLDING; FORMS; SHUTTERING; BUILDING IMPLEMENTS OR OTHER BUILDING AIDS, OR THEIR USE; HANDLING BUILDING MATERIALS ON THE SITE; REPAIRING, BREAKING-UP OR OTHER WORK ON EXISTING BUILDINGS

NOTE

In this subclass the word "scaffolding" includes other supports for like purposes

Workmen's or safety scaffolds

1/00	Scaffolds primarily resting on the ground	1/24	<ul style="list-style-type: none"> comprising essentially special base constructions; comprising essentially special ground-engaging parts, e.g. inclined struts, wheels (component parts E04G 5/00)
1/02	<ul style="list-style-type: none"> composed essentially of members elongated in one dimension only, e.g. poles, lattice masts, with or without end portions of special form, connected together by any means 	2001/242	<ul style="list-style-type: none"> {Scaffolds movable on wheels or tracks}
		2001/244	<ul style="list-style-type: none"> {mechanically operated}
1/04	<ul style="list-style-type: none"> the members being exclusively poles, rods, beams, or other members of similar form and simple cross-section 	2001/246	<ul style="list-style-type: none"> {human powered}
		2001/248	<ul style="list-style-type: none"> {Inclined struts}
1/06	<ul style="list-style-type: none"> comprising members with rod-like or tubular portions fitting together end to end, with or without separate connecting pieces 	1/28	<ul style="list-style-type: none"> designed to provide support only at a low height
		1/30	<ul style="list-style-type: none"> Ladder scaffolds {(ladders having platforms E06C 1/39, platforms on, or for use on; ladders E06C 7/16)}
1/08	<ul style="list-style-type: none"> secured together by bolts or the like penetrating the members 	2001/302	<ul style="list-style-type: none"> {with ladders supporting the platform}
1/10	<ul style="list-style-type: none"> Timber-work constructions 	2001/305	<ul style="list-style-type: none"> {The ladders being vertical and perpendicular to the platform}
1/12	<ul style="list-style-type: none"> comprising members of special, e.g. composite, cross-section or with lugs or the like or lateral apertures for supporting or attaching other members 	2001/307	<ul style="list-style-type: none"> {The ladders being self-supporting folding ladders}
		1/32	<ul style="list-style-type: none"> Other free-standing supports, e.g. using trestles (stands or trestles in general F16M 11/00, {work benches B25H 1/00})
1/14	<ul style="list-style-type: none"> Comprising essentially pre-assembled two-dimensional frame-like elements, e.g. of rods in L- or H--shape, with or without bracing (E04G 1/15 takes precedence) 	1/34	<ul style="list-style-type: none"> Scaffold constructions able to be folded in prismatic or flat parts or able to be turned down
1/15	<ul style="list-style-type: none"> essentially comprising special means for supporting or forming platforms (E04G 1/20 takes precedence); Platforms (boards or planks therefor E04G 5/08, {clips or connections for securing boards E04G 7/28}) 	1/36	<ul style="list-style-type: none"> Scaffolds for particular parts of buildings or buildings of particular shape, e.g. for stairs, cupolas, domes {(scaffolding usable on slipways and in dry docks B63C 5/02)}
1/151	<ul style="list-style-type: none"> {Platforms made of wood, with or without reinforcements (E04G 1/152 takes precedence)} 	1/362	<ul style="list-style-type: none"> {specially adapted for tanks, silos or similar vessels}
1/152	<ul style="list-style-type: none"> {Platforms made of metal or with metal-supporting frame} 	1/365	<ul style="list-style-type: none"> {specially adapted for staircases or stairs}
1/153	<ul style="list-style-type: none"> {Platforms made of plastics, with or without reinforcement (E04G 1/152 takes precedence)} 	1/367	<ul style="list-style-type: none"> {specially adapted for elevator shafts}
1/154	<ul style="list-style-type: none"> {Non-detachably fixed and secured connections between platform and scaffold} 	1/38	<ul style="list-style-type: none"> Scaffolds partly supported by the building (ladders attachable to the structures E06C 1/34)
2001/155	<ul style="list-style-type: none"> {Platforms with an access hatch for getting through from one level to another} 	3/00	Scaffolds essentially supported by building constructions, e.g. adjustable in height (E04G 1/00 takes precedence {and E04G 21/3204 takes precedence})
2001/156	<ul style="list-style-type: none"> {Stackable platforms} 	3/18	<ul style="list-style-type: none"> supported by cantilevers or other provisions mounted in openings in the building, e.g. window openings (E04G 3/28 takes precedence)
2001/157	<ul style="list-style-type: none"> {Extensible platforms, e.g. telescopic platforms} 	3/20	<ul style="list-style-type: none"> supported by walls (E04G 3/28 takes precedence; wall-anchors for supporting scaffolds E04G 5/04; consoles E04G 5/06)
2001/158	<ul style="list-style-type: none"> {Platforms supported by spigots which engage through holes in the platform} 	3/22	<ul style="list-style-type: none"> supported by roofs or ceilings (E04G 3/28 takes precedence)
1/17	<ul style="list-style-type: none"> Comprising essentially pre-assembled three-dimensional elements, e.g. cubic elements 	3/24	<ul style="list-style-type: none"> specially adapted for particular parts of buildings or for buildings of particular shape, e.g. chimney stacks or pylons (E04G 3/28 takes precedence; {E04G 1/362, E04G 3/305 take precedence; scaffolding usable on slipways and in dry docks B63C 5/02})
1/18	<ul style="list-style-type: none"> adjustable in height {(lifting devices for movable platforms, e.g. on vehicles B66F 11/04)} 	3/243	<ul style="list-style-type: none"> {following the outside contour of a (E04G 3/26 takes precedence)}
1/20	<ul style="list-style-type: none"> Scaffolds comprising upright members and provision for supporting cross-members or platforms at different positions therealong 		
1/22	<ul style="list-style-type: none"> Scaffolds having a platform on an extensible substructure, e.g. of telescopic type or with lazy-tongs mechanism 		

3/246	. . {following the inside contour of a building}	5/08	. Scaffold boards or planks {(clips or connections for securing boards E04G 7/28 ; scaffolds comprising special means for supporting or forming platforms, platforms E04G 1/15)}
3/26	. . specially adapted for working on roofs {(devices or arrangements allowing walking on the roof or in the gutter E04D 13/12)}		
3/265	. . . {with means to adapt it to a variable pitch of the roof}	5/10	. Steps or ladders specially adapted for scaffolds {(E04G 27/00 takes precedence)}
3/28	. Mobile scaffolds; Scaffolds with mobile platforms {(movable inspection or maintenance platforms for bridges E01D 19/106 , lifting devices for movable platforms, e.g. on vehicles B66F 11/04)}	5/12	. Canopies {(safety or protective measures preventing damage to building parts or finishing work during construction E04G 21/24)}
2003/283	. . {mobile horizontally}	2005/125	. . {Roof for scaffolds, e.g. extending to the adjacent building}
2003/286	. . {mobile vertically}	5/14	. Railings
3/30	. . suspended by flexible supporting elements, e.g. cables	5/141	. . {with an access door or the like therefor}
3/305	. . . {specially adapted for tanks, silos or similar vessels (E04G 3/24 takes precedence)}	5/142	. . {extensible or telescopic}
3/32	. . . Hoisting devices; Safety devices	5/144	. . {specific for the lateral, i.e. short side of a scaffold}
3/325	. . . . {Safety devices for stabilising the mobile platform, e.g. to avoid it swinging in the wind}	5/145	. . {Toe boards therefor}
3/34	. . characterised by supporting structures provided on the roofs	5/147	. . {specially adapted for mounting prior to the mounting of the platform}
		2005/148	. . {latticed or netted}
5/00	Component parts or accessories for scaffolds (connections E04G 7/00)	5/16	. Struts or stiffening rods, e.g. diagonal rods
5/001	. {Safety or protective measures against falling down relating to scaffoldings (E04G 5/14 takes precedence)}	5/165	. . {Lintel for scaffoldings}
5/002	. . {Protections or covers for scaffolding connections}	7/00	Connections between parts of the scaffold (for building structures in general E04B 1/38; connections in general F16B; {connection for tubes or rods in general F16B 7/00)}
5/003	. {Devices for storing material on the scaffold}	2007/005	. {Adaptors to adapt the connection means of one manufacturer's scaffold system to the one of another manufacturer}
5/004	. {Storage and transport racks for scaffolding components}	7/02	. with separate coupling elements
5/005	. {Devices for cleaning or repairing scaffold tubes}	7/04	. . Flexible elements, with or without brackets, e.g. ropes, cables, chains (in general F16G , {means for fastening cables or ropes to one another or to other objects F16G 11/00)}
5/006	. {Scaffold with cantilevered sections, e.g. to accommodate overhangs or recesses in the facade}		
5/007	. {Devices and methods for erecting scaffolds, e.g. automatic scaffold erectors}	7/06	. . Stiff scaffolding clamps for connecting scaffold members of common shape
2005/008	. {Hoisting devices specially adapted as part of a scaffold system}	7/08	. . . Clamps for parallelly-arranged members
5/02	. Scaffold feet, e.g. with arrangements for adjustment	7/10	. . . . Self-tightening clamps, e.g. stirrups
5/025	. . {Foot load distribution plates}	7/12	. . . Clamps or clips for crossing members (E04G 7/22 takes precedence)
5/04	. Means for fastening, supporting, or bracing scaffolds on or against building constructions (fastenings in general F16B)	7/14	. . . . for clamping the members independently
5/041	. . {for fastening scaffolds on roof frameworks or on roofs}	7/16	. . . . of which the clamping parts for the different members are rotatable with respect to one another
5/043	. . . {for fastening scaffolds on gutters}	7/18	. . . . for clamping the members against one another or against a separate cushioning piece between them
5/045	. . {for fastening scaffoldings on profiles, e.g. I or H profiles}	7/20	. . . for ends of members only, e.g. for connecting members in end-to-end relation
5/046	. . {for fastening scaffoldings on walls}	7/22	. . . for scaffold members in end-to-side relation
5/048	. . . {with hooks to be attached on the wall's crown}	7/24	. . . Couplings involving arrangements covered by more than one of the subgroups E04G 7/08 , E04G 7/12 , E04G 7/20 , E04G 7/22
5/06	. Consoles; Brackets {(E04G 3/00 takes precedence)}	7/26	. . for use with specially-shaped scaffold members
5/061	. . {specially adapted for attachment to scaffolds}	7/28	. . Clips or connections for securing boards (brackets E04G 5/06 ; {scaffolds comprising special means for supporting or forming platforms, platforms E04G 1/15 ; scaffold boards or planks E04G 5/08)}
5/062	. . {specially adapted for attachment to building walls}		
5/064	. . {specially adapted for attachment to building floors}	2007/285	. . . {specially adapted for toe boards}
5/065	. . {specially adapted for attachment to ladders (platforms on, or for use on, ladders E06C 7/16)}	7/30	. Scaffolding bars or members with non-detachably fixed coupling elements
5/067	. . {specially adapted for attachment to posts (E04G 5/061 takes precedence)}		
2005/068	. . {Connections of consoles at an angle}		

- 7/301 . . {for connecting bars or members which are parallel or in end-to-end relation}
- 7/302 . . {for connecting crossing or intersecting bars or members}
- 7/303 . . . {the added coupling elements are only fixed at one of the bars or members to connect}
- 7/304 {with tying means for connecting the bars or members}
- 7/305 {without tying means for connecting the bars or members}
- 7/306 . . . {the added coupling elements are fixed at several bars or members to connect}
- 7/307 {with tying means for connecting the bars or members}
- 7/308 {without tying means for connecting the bars or members}
- 7/32 . . with coupling elements using wedges
- 7/34 . . with coupling elements using positive engagement, e.g. hooks or pins

Falsework, forms, or shutterings for shaping of building parts in situ (scaffolding in general [E04G 1/00](#); moulds for making units for prefabricated buildings or prefabricated stair units [B28B 7/22](#); forms or shutterings of the construction [E04B](#), [E04C](#))

9/00 Forming or shuttering elements for general use {(for prefabrication of concrete elements in a plant [B28B 7/00](#))}

- 9/02 . Forming boards or similar elements ([E04G 9/08](#), [E04G 9/10](#) take precedence)
- 9/021 . . {the form surface being of cardboard}
- 2009/023 . . {with edge protection}
- 2009/025 . . . {by a flange of the board's frame}
- 2009/026 . . . {specific for corners}
- 2009/028 . . {with reinforcing ribs on the underside}
- 9/04 . . the form surface being of wood
- 9/05 . . the form surface being of plastics
- 9/06 . . the form surface being of metal
- 9/065 . . . {the form surface being of wire mesh}
- 9/08 . Forming boards or similar elements, which are collapsible, foldable, or able to be rolled up
- 9/083 . . {which are foldable}
- 9/086 . . {which are specially adapted to be degradable in time, e.g. by moisture or water}
- 9/10 . with additional peculiarities such as surface shaping, insulating or heating, permeability to water or air

11/00 Forms, shutterings, or falsework for making walls, floors, ceilings, or roofs {(for prefabrication of concrete elements in a plant [B28B 7/00](#))}

- 11/02 . for rooms as a whole {by which walls and floors are cast simultaneously}, whole storeys, or whole buildings
- 11/04 . for structures of spherical, spheroid or similar shape, or for cupola structures of circular or polygonal horizontal or vertical section; Inflatable forms (connection of valves to inflatable elastic bodies [B60C 29/00](#); {structures made from masses cast in situ with permanent forms [E04B 1/16](#)})
- 11/045 . . {Inflatable forms}
- 11/06 . for walls, e.g. curved {end panels for wall shutterings; filler elements for wall shutterings; shutterings for vertical ducts} ([E04G 11/04](#) takes precedence)

- 11/062 . . {Forms for curved walls ([E04G 11/20](#) takes precedence)}
- 11/065 . . . {with mechanical means to modify the curvature}
- 2011/067 . . {Integrated forms comprising shuttering skin, bracing or strutting arrangements, workplatforms and railings}
- 11/08 . . Forms, which are completely dismantled after setting of the concrete and re-built for next pouring ({[E04G 11/062](#) takes precedence}; connecting or supporting means for forms [E04G 17/00](#); {walls made by casting, pouring, in situ made in permanent forms [E04B 2/84](#)})
- 11/082 . . . {Retractable forms for the inside face of at least three walls (for rooms as a whole [E04G 11/02](#))}
- 11/085 . . . {End form panels for walls (for floors [E04G 11/365](#))}
- 11/087 . . . {Fill-in form panels in the plane of two adjacent forms}
- 11/10 . . . of elements without beams {which are mounted during erection of the shuttering to brace or couple the elements} ([E04G 11/18](#) takes precedence)
- 11/12 . . . of elements and beams {which are mounted during erection of the shuttering to brace or couple the elements} ([E04G 11/18](#) takes precedence)
- 11/14 with beams arranged in alignment with and between the elements {and form also the shuttering face}
- 11/16 with beams placed within the wall
- 11/18 . . . for double walls
- 11/20 . . Movable forms; Movable forms for moulding cylindrical, conical or hyperbolical structures; Templates serving as forms for positioning blocks or the like ([E04G 11/04](#) takes precedence)
- 11/22 . . . Sliding forms raised continuously or step-by-step and being in contact with the poured concrete during raising {and which are not anchored in the hardened concrete}; Arrangements of lifting means therefor
- 11/24 Construction of lifting jacks or climbing rods for sliding forms (climbing-type hoisting units in general [B66F](#))
- 11/26 . . . the sheathing of which consists of ribbons, endless aprons or the like, guided by driven rollers ({[E04G 11/34](#) takes precedence})
- 11/28 . . . Climbing forms, i.e. forms which are not in contact with the poured concrete during lifting from layer to layer {and which are anchored in the hardened concrete}
- 11/30 which are lifted from layer to layer by turning, tilting, or similar moving upwards about a horizontal axis
- 11/32 . . . Tiltable forms or tilting tables for making walls as a whole or in parts in situ
- 11/34 . . . Horizontally-travelling moulds for making walls block-wise or section-wise ([E04G 11/26](#) takes precedence)
- 11/36 . for floors, ceilings, or roofs of plane or curved surfaces {end formpanels for floor shutterings (floors with lost forms [E04B 5/32](#))}
- 11/365 . . {Stop-end shutterings (end panels for walls [E04G 11/085](#))}

11/38	. . for plane ceilings of concrete	15/00	Forms or shutterings for making openings, cavities, slits, or channels (forming part of shuttering for walls E04G 11/06 , {e.g. double walls E04G 11/18 ; prefabricated elements with elements wholly or partly embedded therein B28B 23/00 ; core or mandrels for the prefabrication of concrete elements B28B 7/28 })
11/40	. . for coffered or ribbed ceilings	15/02	. for windows, doors, or the like
11/42	. . . with beams of metal or prefabricated concrete {which are not, or of which only the upper part is embedded}	15/04	. Cores for anchor holes or the like {around anchors embedded in the concrete (means in or on the building element for connecting to handling apparatus E04G 21/142)}
11/44	. . . with supporting beams for the shuttering used simultaneously as permanent reinforcement of the ribs	15/06	. for cavities or channels in walls of floors, e.g. for making chimneys
11/46	. . . of hat-like or trough-like shape encasing a rib or the section between two ribs or encasing one rib and its adjacent flat floor or ceiling section {(for separately encased beams E04G 13/04)}	15/061	. . {Non-reusable forms (positioning means without forming function E04G 21/185 ; electric distribution boxes H02G 3/08)}
11/48	. . Supporting structures for shutterings or frames for floors or roofs (struts E04G 25/00)	15/063	. . {Re-usable forms}
11/483	. . . {Supporting heads (E04G 11/486 takes precedence)}	15/065	. . . {with mechanical means to modify the section (E04G 15/068 takes precedence)}
11/486	. . . {Dropheads supporting the concrete after removal of the shuttering; Connecting means on beams specially adapted for dropheads}	15/066	. . . {with fluid means to modify the section (E04G 15/068 takes precedence)}
11/50	. . . Girders, beams, or the like as supporting members for forms (girders intended to form part of the construction E04C 3/02 ; members, e.g. consoles, for attachment to the wall E04G 17/16)	15/068	. . . {for channels open towards the surface}
2011/505	. . . . {with nailable or screwable inserts}	17/00	Connecting or other auxiliary members for forms, falsework structure, or shutterings
11/52	. . . . of several units arranged one after another	17/001	. {Corner fastening or connecting means for forming or stiffening elements (forms for rooms as a whole E04G 11/02 ; forms for vertical ducts E04G 11/06 ; forms for columns E04G 13/02)}
11/54	. . . . of extensible type, with or without adjustable supporting shoes, fish-plates, or the like	17/002	. {Workplatforms, railings; Arrangements for pouring concrete, attached to the form}
11/56	. . . . . of telescopic type	17/004	. {Strips for creating a chamfered edge}
13/00	Falsework, forms, or shutterings for particular parts of buildings, e.g. stairs, steps, cornices, balconies {foundations, sills (E04G 11/365 takes precedence; flat foundations, e.g. with lost forms E02D 27/01; removable forms or shutterings for road-building purposes E01C 19/50)}	17/005	. {Strips for covering joints between form sections, e.g. to avoid burring or spilling of laitance}
13/02	. for columns or like pillars; Special tying or clamping means therefor {(columns, pillars of concrete with permanent forms E04C 3/34)}	17/007	. {Plugs to close openings in forms' surface}
13/021	. . {for circular columns}	2017/008	. {Pin and hole connection type}
13/023	. . {with means for modifying the sectional dimensions (E04G 13/021 takes precedence)}	17/02	. Connecting or fastening means for non-metallic forming or stiffening elements {(E04G 17/001 takes precedence)}
13/025	. . . {with stiff clamping means bracing the back-side of the form without penetrating the forming surface}	17/04	. Connecting or fastening means for metallic forming or stiffening elements, {e.g. for connecting metallic elements to non-metallic elements (E04G 17/001 takes precedence)}
13/026	. . . . {the forming surface-element being the same for different sections of the column}	17/042	. . {being tensioned by threaded elements (E04G 17/047 takes precedence)}
13/028	. . {for columns' capital}	17/045	. . {being tensioned by wedge-shaped elements (E04G 17/047 takes precedence)}
13/04	. for lintels, beams, or transoms to be encased separately; Special tying or clamping means therefor {(hat-like or trough-like elements encasing a rib and its adjacent ceiling section E04G 11/46 ; } members, e.g. consoles, for attachment to the wall E04G 17/16)	17/047	. . {simultaneously tying two facing forms}
13/06	. for stairs, steps, cornices, balconies, or other parts corbelled out of the wall {(moulds for making prefabricated stair units B28B 7/225 ; stairways with permanent forms E04F 11/02)}	17/06	. Tying means; Spacers; {Devices for extracting or inserting wall ties (E04G 17/047 takes precedence; permanent forms for walls, e.g. with ties E04B 2/86)}
13/062	. . {for stairs or steps}	2017/0601	. . {Tying means, the tensional element of which is threaded to ensure its fastening or tensioning}
13/064	. . {for chimney crowns}	2017/0603	. . . {one-piece element}
13/066	. . {for overhangs}	2017/0605	. . . . {fully recoverable}
13/068	. . {for window or door sills}	2017/0607	. . . . {remaining completely or partially embedded in the cast material}
		2017/0609	. . . {the element consisting of several parts}
		2017/0611	. . . . {fully recoverable}
		2017/0612	. . . . {remaining completely or partially embedded in the cast material}
		2017/0614	. . {Tying means, the tensional element of which is fastened or tensioned by means of wedge-shaped members}

2017/0616	. . . {one-piece element}	17/18	. Devices for suspending or anchoring form elements to girders placed in ceilings, e.g. hangers
2017/0618	. . . . {fully recoverable}		
2017/062	. . . . {remaining completely or partially embedded in the cast material}	19/00	Auxiliary treatment of forms, e.g. dismantling; Cleaning devices (lubricating compositions C10M)
2017/0622	. . . {the element consisting of several parts}	19/003	. {Arrangements for stabilising the forms or for moving the forms from one place to another (lifting of articles in general B66C 1/00)}
2017/0624	. . . . {fully recoverable}		
2017/0625	. . . . {remaining completely or partially embedded in the cast material}	19/006	. {Cleaning devices}
2017/0627	. . {Tying means, the tensional element of which is fastened or tensioned by other means}	21/00	Preparing, conveying, or working-up building materials or building elements in situ; Other devices or measures for constructional work (conveying in general B65G; lifting devices B66; working stone-like materials B28D; measuring instruments G01)
2017/0629	. . . {one-piece element}		
2017/0631	. . . . {fully recoverable}	21/005	. {Mortar boards}
2017/0633	. . . . {remaining completely or partially embedded in the cast material}	21/02	. Conveying or working-up concrete or similar masses able to be heaped or cast (in connection with finishing work E04F ; construction and surfacing of floorings made of similar material to roads or pavements E01C ; in connection with barrages E02B 7/00 ; in connection with foundations E02D 15/00 ; composition of concrete C04B ; working concrete in general, e.g. mixing machines B28C)
2017/0635	. . . {the element consisting of several parts}		
2017/0637	. . . . {fully recoverable}		
2017/0638	. . . . {remaining completely or partially embedded in the cast material}		
17/064	. . {Spacers placed on the bottom of the mould}		
17/0642	. . {Devices for extracting or inserting wall ties or parts thereof}		
17/0644	. . {Plug means for tie-holes}		
2017/0646	. . {made of a flat strip, e.g. of metal}		
2017/0648	. . . {The strip being twisted}		
17/065	. . Tying means, the tensional elements of which are threaded to enable their fastening or tensioning	21/025	. . {Buckets specially adapted for use with concrete}
17/0651	. . . {One-piece elements}	21/04	. . Devices for both conveying and distributing (concrete pumps F04)
17/0652	. . . . {fully recoverable}		
17/0654	. . . . {remaining completely or partially embedded in the cast material}	21/0409	. . . {with conveyor belts (truck mixer with conveyor belts B28C 5/4255)}
17/0655	. . . {the element consisting of several parts}	21/0418	. . . {with distribution hose}
17/0657	. . . . {fully recoverable}	21/0427	. . . . {on a static support, e.g. crane}
17/0658	. . . . {remaining completely or partially embedded in the cast material}	21/0436	. . . . {on a mobile support, e.g. truck}
17/07	. . Tying means, the tensional elements of which are fastened or tensioned by means of wedge-shaped members	21/0445	. . . . {with booms}
17/0707	. . . {One-piece elements}	21/0454	. . . . {with boom vibration damper mechanisms}
17/0714	. . . . {fully recoverable}	21/0463	. . . . {with boom control mechanisms, e.g. to automate concrete distribution}
17/0721	. . . . {remaining completely or partially embedded in the cast material}	21/0472	. . . . {Details of connection of the hose to the formwork, e.g. inlets}
17/0728	. . . {the element consisting of several parts}	21/0481	. . . {Concrete chutes}
17/0735	. . . . {fully recoverable}	2021/049	. . . {concrete mixing nozzles specially adapted for conveying devices}
17/0742	. . . . {remaining completely or partially embedded in the cast material}	21/06	. . Solidifying concrete, e.g. by application of vacuum before hardening (devices for solidifying also soil E02D 3/02 ; for road building E01C 19/00 ; for producing shaped articles B28B 1/00)
17/075	. . Tying means, the tensional elements of which are fastened or tensioned by other means	21/061	. . . {by applying vacuum or vacuum combined with vibration}
17/0751	. . . {One-piece elements}	21/063	. . . ... E04G 21/08 take...
17/0752	. . . . {fully recoverable}	21/065	. . . . {making use of vibrating or jolting tools acting upon the shuttering}
17/0754	. . . . {remaining completely or partially embedded in the cast material}	21/066	. . . . {making use of vibrating or jolting tools acting upon the surface of the concrete, whether or not provided with parts penetrating the concrete}
17/0755	. . . {the element consisting of several parts}		
17/0757	. . . . {fully recoverable}	21/068	. . . . {making use of vibrating or jolting tools acting upon the reinforcement}
17/0758	. . . . {remaining completely or partially embedded in the cast material}	21/08	. . . Internal vibrators, {e.g. needle vibrators (combined with vacuum E04G 21/061)}
17/12	. . with arms engaging the forms	21/10	. . Devices for levelling, e.g. templates or boards (smoothing tools E04F 21/16 , E04F 21/24)
17/14	. Bracing or strutting arrangements for form-walls; Devices for aligning forms (E04G 25/00 takes precedence ; connecting and aligning E04G 17/04)		
17/16	. Members, e.g. consoles, for attachment to the wall to support girders, beams, or the like carrying forms or moulds for floors, lintels, or transoms		

21/12	• Mounting of reinforcing inserts; Prestressing (shell tubes for prestressing members E04C 5/10 ; anchoring means E04C 5/12 ; connections of reinforcing elements and spacers E04C 5/16)	21/1866	• {for making arches}
21/121	• . {Construction of stressing jacks}	21/1875	• {for making curved walls (E04G 11/06 takes precedence)}
21/122	• . {Machines for joining reinforcing bars}	21/1883	• {Spacers, e.g. to have a constant spacing between courses of masonry}
21/123	• . . {Wire twisting tools (bundling articles by twisting, e.g. wire B65B 13/28 ; bundling rods, sticks, or like elongated objects with, e.g. wire B65B 27/10 ; tying devices for hops, vines or trees with, e.g. wire A01G 17/08)}	21/1891	• {Cut-marking templates for rafters; Templates used for assembling building frameworks}
21/125	• . {Reinforcement continuity box}	21/20	• . . for applying mortar
21/126	• . . {for cable loops}	21/201	• {Trowels}
2021/127	• . {Circular prestressing of, e.g. columns, tanks, domes}	21/202	• {Hoses specially adapted therefor}
2021/128	• . {Prestressing each strand of a cable one by one to the same tension}	21/203	• {Prepared mortar strips, pouches or the like to be applied between masonry courses}
21/14	• Conveying or assembling building elements (roofing E04D ; finishing work E04F)	21/204	• {Mortar sledges}
21/142	• . {Means in or on the elements for connecting same to handling apparatus (E04B 1/38 takes precedence)}	21/205	• {with closable mortar opening}
21/145	• . . {specific for hollow plates}	21/206	• {Devices to apply thin-bed mortar joints}
21/147	• . . {specific for prefabricated masonry wall elements}	21/207	• {Static templates for applying a predefined layer of mortar}
21/16	• . Tools or apparatus (devices for erecting fences E04H 17/26)	2021/208	• {on a vertical joint}
21/161	• . . {Handling units comprising at least considerable parts of two sides of a room or like enclosed space}	21/22	• . . for setting building elements with mortar, e.g. bricklaying machines
21/162	• . . {Handles to carry construction blocks (load carriers B65G 7/12)}	21/24	• Safety or protective measures preventing damage to building parts or finishing work during construction (as auxiliary structures for scaffolds E04G , { E04G 5/12 })
21/163	• . . {Jacks specially adapted for working-up building elements (jacks in general B66F 3/00)}	21/241	• . {for temporarily closing door or window openings}
21/164	• . . {specially adapted for working-up chimneys}	21/242	• . {for temporarily covering the whole worksite, e.g. building, trench}
21/165	• . . {specially adapted for in-situ prefabricated building elements to be tilted up in position}	21/243	• . {for creating a temporary partition in a closed room}
21/166	• . . {Landings, receiving platforms}	21/245	• . {for temporarily protecting wall crowns}
21/167	• . . {specially adapted for working-up plates, panels or slab shaped building elements}	21/246	• . {specially adapted for curing concrete <i>in situ</i> , e.g. by covering it with protective sheets}
21/168	• . . . {used for tilting, e.g. from horizontal to vertical position or <i>vice versa</i> }	21/247	• . {specific for protecting windows or doors leaves}
21/169	• . . {specially adapted for working-up reinforcement mats}	2021/248	• . {Tarpaulins specially adapted therefor}
21/18	• . . Adjusting tools; Templates; {(workshop marking tools B25H ; for coverings or linings E04F 21/18)}	21/26	• . Strutting means for wall parts; Supports or the like, e.g. for holding in position prefabricated walls (E04G 25/00 takes precedence; on existing buildings E04G 23/04)
21/1808	• {Holders for bricklayers' lines, bricklayers' bars; Sloping braces (cord-line chalkers B44D 3/38)}	21/28	• . against unfavourable weather influence
21/1816	• {Adjustable positioning means between line-holder bars and construction}	21/30	• . against mechanical damage or dirt, e.g. guard covers of stairs
21/1825	• {Line-holders without supporting bars}	21/32	• Safety or protective measures for persons during the construction of buildings (relating to scaffolds E04G 5/00 ; climbing tools, e.g. climbing irons for masts A63B 27/00 ; ropes or belts for life saving A62B 1/16 , A62B 35/00)
21/1833	• {Line-holders for setting-out builders' work, e.g. foundations}	21/3204	• . {against falling down}
21/1841	• {Means for positioning building parts or elements (strutting means for wall parts E04G 21/26)}	21/3209	• . . {Temporary tunnels specially adapted against falling objects}
21/185	• {for anchoring elements or elements to be incorporated in the structure}	21/3214	• . . {Means for working on roofs (on flat roofs E04G 21/3223)}
21/1858	• {Templates for window or door openings, e.g. in a masonry wall (E04G 15/02 takes precedence)}	21/3219	• . . {Means supported by the building wall, e.g. security consoles (E04G 5/06 takes precedence)}
		21/3223	• . . {Means supported by building floors or flat roofs, e.g. safety railings}
		21/3228	• {Folding railings for flat roof edge, e.g. to hide the railings from view when not in use}
		21/3233	• {without permanent provision in the floor or roof}
		21/3238	• {using counterweights}
		21/3242	• {using clamps}

21/3247	. . . {Storey high safety barrier hung from the facade and sliding up from level to level as work progresses}	23/024	. . . {of basement floors}
21/3252	. . . {Protections, e.g. cover, caps, against impaling on starter reinforcement bars}	23/0244	. . . {of beams at places of holes, e.g. drilled in them}
2021/3257	. . . {specific for floors made of prefabricated hollow plates}	2023/0248	. . . {of elements made of wood}
21/3261	. . {Safety-nets; Safety mattresses; Arrangements on buildings for connecting safety-lines (jumping-sheets , jumping-mattresses A62B 1/22)}	2023/0251	. . . {by using fiber reinforced plastic elements}
21/3266	. . . {Safety nets}	2023/0255	. . . {whereby the fiber reinforced plastic elements are stressed}
21/3271	. . . {Safety mattresses}	2023/0259	. . . . {Devices specifically adapted to stress the fiber reinforced plastic elements}
21/3276	. . . {Arrangements on buildings for connecting safety-lines (fastening devices for devices for lowering persons from buildings A62B 1/04)}	2023/0262	. . . . {Devices specifically adapted for anchoring the fiber reinforced plastic elements, e.g. to avoid peeling off}
21/328	. . . . {fastened to the roof covering or insulation}	23/0266	. . {Enlarging}
21/3285	. . . . {fastened to standing seams of the roof covering}	23/027	. . . {Loft conversion by truss modification}
21/329	. . . . {with measures for dampening the fall}	23/0274	. . {Temporary shoring of wall opening}
21/3295	. . . {Guide tracks for safety lines (arrangements for bypassing safety track supports without life line disconnection A62B 35/0087)}	23/0277	. . {Repairing or restoring window or door frames (door frames E06B 1/00 , window frames E06B 3/00)}
23/00	Working measures on existing buildings, (domestic cleaning of walls or floors A47L 11/00 ; grinding floors or walls B24B 7/18 ; removing of wall coverings B44C 7/00 ; removing of paint from surfaces B44D 3/16 ; electrochemical desalination or re-alkalisation C04B 41/00); on foundations E02D 35/00 , E02D 37/00 ; in connection with insulations E04B ; subsequent or finishing work E04F)	23/0281	. . {Repairing or restoring roofing or roof covering (roof covering E04D 3/00)}
	NOTE In addition to the subject matter referred out in this group, subject matter relating to working measures on existing buildings which are analogous to those used in constructing new buildings, are classified in the appropriate construction groups.	23/0285	. . {Repairing or restoring flooring (flooring E04F 15/00)}
23/002	. {Arrangements for cleaning building facades}	23/0288	. . {Repairing or restoring floor slabs (floors E04B 5/00)}
23/004	. . {with arrangements for collecting waste water or cleaning products}	23/0292	. . {Repairing or restoring balconies (balcony structures E04B 1/003)}
23/006	. {Arrangements for removing of previously fixed floor coverings}	23/0296	. . {Repairing or restoring facades (covering or linings , e.g. for walls E04F 13/00)}
23/008	. {Working measures on existing vertical ducts, e.g. chimneys, garbage chutes}	23/04	. Propping of endangered or damaged buildings or building parts, e.g. with respect to air-raid action (struts E04G 25/00)
23/02	. Repairing, e.g. filling cracks; Restoring; Altering; Enlarging (compositions of filling material C04B ; strengthening, widening, repairing of bridges E01D 22/00 ; drying damp layers by temporary mechanical ventilation E04B 1/7092)}	23/06	. Separating, lifting, removing of buildings; Making a new sub-structure
23/0203	. . {Arrangements for filling cracks or cavities in building constructions}	23/065	. . {Lifting of buildings (E04G 21/163 takes precedence)}
23/0207	. . . {in hollow structures, e.g. cavity walls}	23/08	. Wrecking of buildings (of fences E04H 17/26 ; Demolition agents based on cementitious or like materials C04B 41/0009)
23/0211	. . . {using injection}	23/081	. . {using hydrodemolition}
23/0214	. . . {using covering strips}	23/082	. . {using shears, breakers, jaws and the like (metal-cutting or concrete-crushing implements mounted on backhoes E02F 3/965)}
23/0218	. . {Increasing or restoring the load-bearing capacity of building construction elements (E04G 23/0203 and E04G 23/0266 take precedence)}	23/083	. . {using vaporising wire technique (particular applications of blasting techniques F42D 3/00)}
23/0222	. . . {Replacing or adding wall ties}	23/084	. . {using breaker balls or the like}
23/0225	. . . {of circular building elements, e.g. by circular bracing}	2023/085	. . {crowbars specially adapted for wrecking wooden buildings}
23/0229	. . . {of foundations or foundation walls}	2023/086	. . {of tanks, reservoirs or the like}
23/0233	. . . {of vaulted or arched building elements}	2023/087	. . {of chimneys, smoke stacks or the like}
23/0237	. . . {of storey floors}	2023/088	. . {of window or door frames}
		25/00	Shores or struts (specially designed for use in mines E21D 15/00 {; E04G 21/26 , E04G 23/04 take precedence}); Chocks
		2025/003	. {Supports therefor, e.g. tripods}
		2025/006	. {Heads therefor, e.g. pivotable}
		25/02	. non-telescopic
		25/04	. telescopic (locking of telescopic systems in general F16B 7/10)}
		2025/042	. . {with devices to avoid accidental disengagement of the telescopic elements, e.g. during transport}
		2025/045	. . {which telescoping action effected by a lever}
		2025/047	. . {which telescoping action effected by a piston}
		25/06	. . with parts held together by positive means

- 25/061 . . . {by pins}
- 25/063 {with safety devices to avoid the accidental
loss or unlocking of the pin, e.g. chains
attaching the pin to the prop}
- 25/065 . . . {by a threaded nut}
- 25/066 . . . {by a wedge}
- 25/068 . . . {by a cam}
- 25/08 . . with parts held relatively to each other by friction
or gripping
- 27/00 Temporary arrangements for giving access from
one level to another for men or vehicles, e.g. steps,
ramps (for scaffolds [E04G 5/10](#); gangways [B63](#); lifts
[B66](#))**