

CPC COOPERATIVE PATENT CLASSIFICATION

E FIXED CONSTRUCTIONS

BUILDING

E04 BUILDING

E04G SCAFFOLDING; FORMS; SHUTTERING; BUILDING IMPLEMENTS OR 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

WARNINGS

- The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
[E04G 23/03](#) covered by [E04G 23/0266](#)
- In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Workmen's or safety scaffolds

1/00 Scaffolds primarily resting on the ground

- 1/02 . 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
- 1/04 . . the members being exclusively poles, rods, beams, or other members of similar form and simple cross-section
- 1/06 . . . comprising members with rod-like or tubular portions fitting together end to end, with or without separate connecting pieces
- 1/08 . . . secured together by bolts or the like penetrating the members
- 1/10 Timber-work constructions
- 1/12 . . comprising members of special, e.g. composite, cross-section or with lugs or the like or lateral apertures for supporting or attaching other members
- 1/14 . 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](#))
- 1/15 . 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](#)})
- 1/151 . . {Platforms made of wood, with or without reinforcements ([E04G 1/152 takes precedence](#))}
- 1/152 . . {Platforms made of metal or with metal-supporting frame}
- 1/153 . . {Platforms made of plastics, with or without reinforcement ([E04G 1/152 takes precedence](#))}
- 1/154 . . {Non-detachably fixed and secured connections between platform and scaffold}
- 2001/155 . . {Platforms with an access hatch for getting through from one level to another}

- 2001/156 . . {Stackable platforms}
- 2001/157 . . {Extensible platforms, e.g. telescopic platforms}
- 2001/158 . . {Platforms supported by spigots which engage through holes in the platform}
- 1/17 . Comprising essentially pre-assembled three-dimensional elements, e.g. cubic elements
- 1/18 . adjustable in height {([lifting devices for movable platforms, e.g. on vehicles B66F 11/04](#))}
- 1/20 . . Scaffolds comprising upright members and provision for supporting cross-members or platforms at different positions therealong
- 1/22 . . Scaffolds having a platform on an extensible substructure, e.g. of telescopic type or with lazy-tongs mechanism
- 1/24 . comprising essentially special base constructions; comprising essentially special ground-engaging parts, e.g. inclined struts, wheels ([component parts E04G 5/00](#))
- 2001/242 . . {Scaffolds movable on wheels or tracks}
- 2001/244 . . . {mechanically operated}
- 2001/246 {human powered}
- 2001/248 . . {Inclined struts}
- 1/28 . designed to provide support only at a low height
- 1/30 . . Ladder scaffolds {([ladders having platforms E06C 1/39](#), platforms on, or for use on; ladders [E06C 7/16](#))}
- 2001/302 . . . {with ladders supporting the platform}
- 2001/305 {The ladders being vertical and perpendicular to the platform}
- 2001/307 {The ladders being self-supporting folding ladders}
- 1/32 . . Other free-standing supports, e.g. using trestles ([stands or trestles in general F16M 11/00](#) {, work benches [B25H 1/00](#)})
- 1/34 . Scaffold constructions able to be folded in prismatic or flat parts or able to be turned down

1/36	• 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)}	5/006	• {Scaffold with cantilevered sections, e.g. to accommodate overhangs or recesses in the facade}
1/362	• • {specially adapted for tanks, silos or similar vessels}	5/007	• {Devices and methods for erecting scaffolds, e.g. automatic scaffold erectors}
1/365	• • {specially adapted for staircases or stairs}	2005/008	• {Hoisting devices specially adapted as part of a scaffold system}
1/367	• • {specially adapted for elevator shafts}	5/02	• Scaffold feet, e.g. with arrangements for adjustment
1/38	• Scaffolds partly supported by the building (ladders attachable to the structures E06C 1/34)	5/025	• • {Foot load distribution plates}
3/00	Scaffolds essentially supported by building constructions, e.g. adjustable in height (E04G 1/00 takes precedence {and E04G 21/3204 takes precedence})	5/04	• Means for fastening, supporting, or bracing scaffolds on or against building constructions (fastenings in general F16B)
3/18	• supported by cantilevers or other provisions mounted in openings in the building, e.g. window openings (E04G 3/28 takes precedence)	5/041	• • {for fastening scaffolds on roof frameworks or on roofs}
3/20	• supported by walls (E04G 3/28 takes precedence; wall-anchors for supporting scaffolds E04G 5/04; consoles E04G 5/06)	5/043	• • • {for fastening scaffolds on gutters}
3/22	• supported by roofs or ceilings (E04G 3/28 takes precedence)	5/045	• • {for fastening scaffoldings on profiles, e.g. I or H profiles}
3/24	• 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})	5/046	• • {for fastening scaffoldings on walls}
3/243	• • {following the outside contour of a building (E04G 3/26 takes precedence)}	5/048	• • • {with hooks to be attached on the wall's crown}
3/246	• • {following the inside contour of a building}	5/06	• Consoles; Brackets {(E04G 3/00 takes precedence)}
3/26	• • specially adapted for working on roofs {(devices or arrangements allowing walking on the roof or in the gutter E04D 13/12)}	5/061	• • {specially adapted for attachment to scaffolds}
3/265	• • • {with means to adapt it to a variable pitch of the roof}	5/062	• • {specially adapted for attachment to building walls}
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)}	5/064	• • {specially adapted for attachment to building floors}
2003/283	• • {mobile horizontally}	5/065	• • {specially adapted for attachment to ladders (platforms on, or for use on, ladders E06C 7/16)}
2003/286	• • {mobile vertically}	5/067	• • {specially adapted for attachment to posts (E04G 5/061 takes precedence)}
3/30	• • suspended by flexible supporting elements, e.g. cables	2005/068	• • {Connections of consoles at an angle}
3/305	• • • {specially adapted for tanks, silos or similar vessels (E04G 3/24 takes precedence)}	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)}
3/32	• • • Hoisting devices; Safety devices	5/10	• Steps or ladders specially adapted for scaffolds {(E04G 27/00 takes precedence)}
3/325	• • • • {Safety devices for stabilising the mobile platform, e.g. to avoid it swinging in the wind}	5/12	• Canopies {(safety or protective measures preventing damage to building parts or finishing work during construction E04G 21/24)}
3/34	• • characterised by supporting structures provided on the roofs	2005/125	• • {Roof for scaffolds, e.g. extending to the adjacent building}
5/00	Component parts or accessories for scaffolds (connections E04G 7/00)	5/14	• Railings
5/001	• {Safety or protective measures against falling down relating to scaffoldings (E04G 5/14 takes precedence)}	5/141	• • {with an access door or the like therefor}
5/002	• • {Protections or covers for scaffolding connections}	5/142	• • {extensible or telescopic}
5/003	• {Devices for storing material on the scaffold}	5/144	• • {specific for the lateral, i.e. short side of a scaffold}
5/004	• {Storage and transport racks for scaffolding components}	5/145	• • {Toe boards therefor}
5/005	• {Devices for cleaning or repairing scaffold tubes}	5/147	• • {specially adapted for mounting prior to the mounting of the platform}
		2005/148	• • {latticed or netted}
		5/16	• Struts or stiffening rods, e.g. diagonal rods
		5/165	• • {Lintel for scaffoldings}
		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})
		2007/005	• {Adaptors to adapt the connection means of one manufacturer's scaffold system to the one of another manufacturer}
		7/02	• with separate coupling elements
		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})

7/06	. . Stiff scaffolding clamps for connecting scaffold members of common shape	9/05	. . the form surface being of plastics
7/08	. . . Clamps for parallelly-arranged members	9/06	. . the form surface being of metal
7/10	. . . Self-tightening clamps, e.g. stirrups	9/065	. . . {the form surface being of wire mesh}
7/12	. . . Clamps or clips for crossing members (E04G 7/22 takes precedence)	9/08	. Forming boards or similar elements, which are collapsible, foldable, or able to be rolled up
7/14	. . . . for clamping the members independently	9/083	. . {which are foldable}
7/16	. . . . of which the clamping parts for the different members are rotatable with respect to one another	9/086	. . {which are specially adapted to be degradable in time, e.g. by moisture or water}
7/18	. . . . for clamping the members against one another or against a separate cushioning piece between them	9/10	. with additional peculiarities such as surface shaping, insulating or heating, permeability to water or air
7/20	. . . for ends of members only, e.g. for connecting members in end-to-end relation	11/00	Forms, shutterings, or falsework for making walls, floors, ceilings, or roofs {(for prefabrication of concrete elements in a plant B28B 7/00)}
7/22	. . . for scaffold members in end-to-side relation	11/02	. for rooms as a whole {by which walls and floors are cast simultaneously}, whole storeys, or whole buildings
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	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)
7/26	. . for use with specially-shaped scaffold members	11/045	. . {Inflatable forms}
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)	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)
2007/285	. . . {specially adapted for toe boards}	11/062	. . {Forms for curved walls (E04G 11/20 takes precedence)}
7/30	. Scaffolding bars or members with non-detachably fixed coupling elements	11/065	. . . {with mechanical means to modify the curvature}
7/301	. . {for connecting bars or members which are parallel or in end-to-end relation}	2011/067	. . {Integrated forms comprising shuttering skin, bracing or strutting arrangements, workplatforms and railings}
7/302	. . {for connecting crossing or intersecting bars or members}	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)}
7/303	. . . {the added coupling elements are only fixed at one of the bars or members to connect}	11/082	. . . {Retractable forms for the inside face of at least three walls (for rooms as a whole E04G 11/02)}
7/304	. . . . {with tying means for connecting the bars or members}	11/085	. . . {End form panels for walls (for floors E04G 11/365)}
7/305	. . . . {without tying means for connecting the bars or members}	11/087	. . . {Fill-in form panels in the plane of two adjacent forms}
7/306	. . . {the added coupling elements are fixed at several bars or members to connect}	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)
7/307	. . . . {with tying means for connecting the bars or members}	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)
7/308	. . . . {without tying means for connecting the bars or members}	11/14	. . . . with beams arranged in alignment with and between the elements {and form also the shuttering face}
7/32	. . with coupling elements using wedges	11/16	. . . . with beams placed within the wall
7/34	. . with coupling elements using positive engagement, e.g. hooks or pins	11/18	. . . for double walls
		11/20	. . Movable forms; Movable forms for moulding cylindrical, conical or hyperbolic structures; Templates serving as forms for positioning blocks or the like (E04G 11/04 takes precedence)
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		

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	13/02	. for columns or like pillars; Special tying or clamping means therefor {columns, pillars of concrete with permanent forms E04C 3/34}
11/24	. . . . Construction of lifting jacks or climbing rods for sliding forms (climbing-type hoisting units in general B66F)	13/021	. . {for circular columns}
11/26	. . . the sheathing of which consists of ribbons, endless aprons or the like, guided by driven rollers {E04G 11/34 takes precedence}	13/023	. . {with means for modifying the sectional dimensions (E04G 13/021 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}	13/025	. . . {with stiff clamping means bracing the back-side of the form without penetrating the forming surface}
11/30	. . . . which are lifted from layer to layer by turning, tilting, or similar moving upwards about a horizontal axis	13/026	. . . . {the forming surface-element being the same for different sections of the column}
11/32	. . . Tiltable forms or tilting tables for making walls as a whole or in parts in situ	13/028	. . {for columns' capital}
11/34	. . . Horizontally-travelling moulds for making walls blockwise or section-wise (E04G 11/26 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}
11/36	. for floors, ceilings, or roofs of plane or curved surfaces {end formpanels for floor shutterings (floors with lost forms E04B 5/32)}	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)}
11/365	. . {Stop-end shutterings (end panels for walls E04G 11/085)}	13/062	. . {for stairs or steps}
11/38	. . for plane ceilings of concrete	13/064	. . {for chimney crowns}
11/40	. . for coffered or ribbed ceilings	13/066	. . {for overhangs}
11/42	. . . with beams of metal or prefabricated concrete {which are not, or of which only the upper part is embedded}	13/068	. . {for window or door sills}
11/44	. . . with supporting beams for the shuttering used simultaneously as permanent reinforcement of the ribs	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})
11/46	. . . 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)}	15/02	. for windows, doors, or the like
11/48	. . Supporting structures for shutterings or frames for floors or roofs (struts E04G 25/00)	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)}
11/483	. . . {Supporting heads (E04G 11/486 takes precedence)}	15/06	. for cavities or channels in walls of floors, e.g. for making chimneys
11/486	. . . {Dropheads supporting the concrete after removal of the shuttering; Connecting means on beams specially adapted for dropheads}	15/061	. . {Non-reusable forms (positioning means without forming function E04G 21/185; electric distribution boxes H02G 3/08)}
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)	15/063	. . {Re-usable forms}
2011/505	. . . . {with nailable or screwable inserts}	15/065	. . . {with mechanical means to modify the section (E04G 15/068 takes precedence)}
11/52	. . . . of several units arranged one after another	15/066	. . . {with fluid means to modify the section (E04G 15/068 takes precedence)}
11/54	. . . . of extensible type, with or without adjustable supporting shoes, fishplates, or the like	15/068	. . . {for channels open towards the surface}
11/56	. . . . . of telescopic type	17/00	Connecting or other auxiliary members for forms, falsework structures, or shutterings
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)}	17/001	. {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)}
		17/002	. {Workplatforms, railings; Arrangements for pouring concrete, attached to the form}
		17/004	. {Strips for creating a chamfered edge}
		17/005	. {Strips for covering joints between form sections, e.g. to avoid burring or spilling of laitance}
		17/007	. {Plugs to close openings in forms' surface}
		2017/008	. {Pin and hole connection type}

17/02	<ul style="list-style-type: none"> Connecting or fastening means for non-metallic forming or stiffening elements {(E04G 17/001 takes precedence)} 	19/00	Auxiliary treatment of forms, e.g. dismantling; Cleaning devices (lubricating compositions C10M)
17/04	<ul style="list-style-type: none"> 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)} 	19/003	<ul style="list-style-type: none"> {Arrangements for stabilising the forms or for moving the forms from one place to another (lifting of articles in general B66C 1/00)}
17/042	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {being tensioned by threaded elements (E04G 17/047 takes precedence)} 	19/006	<ul style="list-style-type: none"> {Cleaning devices}
17/045	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {being tensioned by wedge-shaped elements (E04G 17/047 takes precedence)} 	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)
17/047	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {simultaneously tying two facing forms} 	21/005	<ul style="list-style-type: none"> {Mortar boards}
17/06	<ul style="list-style-type: none"> 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)} 	21/02	<ul style="list-style-type: none"> 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)
17/064	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Spacers placed on the bottom of the mould} 	21/025	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Buckets specially adapted for use with concrete}
17/0642	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Devices for extracting or inserting wall ties or parts thereof} 	21/04	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Devices for both conveying and distributing (concrete pumps F04)
17/0644	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Plug means for tie-holes} 	21/0409	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with conveyor belts (truck mixer with conveyor belts B28C 5/4255)}
2017/0646	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {made of a flat strip, e.g. of metal} 	21/0418	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with distribution hose}
2017/0648	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {The strip being twisted} 	21/0427	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {on a static support, e.g. crane}
17/065	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Tying means, the tensional elements of which are threaded to enable their fastening or tensioning 	21/0436	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {on a mobile support, e.g. truck}
17/0651	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {One-piece elements} 	21/0445	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with booms}
17/0652	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {fully recoverable} 	21/0454	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with boom vibration damper mechanisms}
17/0654	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {remaining completely or partially embedded in the cast material} 	21/0463	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with boom control mechanisms, e.g. to automate concrete distribution}
17/0655	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {the element consisting of several parts} 	21/0472	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {Details of connection of the hose to the formwork, e.g. inlets}
17/0657	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {fully recoverable} 	21/0481	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {Concrete chutes}
17/0658	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {remaining completely or partially embedded in the cast material} 	2021/049	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {concrete mixing nozzles specially adapted for conveying devices}
17/07	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Tying means, the tensional elements of which are fastened or tensioned by means of wedge-shaped members 	21/06	<ul style="list-style-type: none"> <ul style="list-style-type: none"> 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)
17/0707	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {One-piece elements} 	21/061	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {by applying vacuum or vacuum combined with vibration}
17/0714	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {fully recoverable} 	21/063	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {making use of vibrating or jolting tools (E04G 21/08 takes precedence)}
17/0721	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {remaining completely or partially embedded in the cast material} 	21/065	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {acting upon the shuttering}
17/0728	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {the element consisting of several parts} 	21/066	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {acting upon the surface of the concrete, whether or not provided with parts penetrating the concrete}
17/0735	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {fully recoverable} 	21/068	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {acting upon the reinforcement}
17/0742	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {remaining completely or partially embedded in the cast material} 	21/08	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Internal vibrators {, e.g. needle vibrators (combined with vacuum E04G 21/061)}
17/075	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Tying means, the tensional elements of which are fastened or tensioned by other means 	21/10	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Devices for levelling, e.g. templates or boards (smoothing tools E04F 21/16, E04F 21/24)
17/0751	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {One-piece elements} 	21/12	<ul style="list-style-type: none"> <ul style="list-style-type: none"> 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)
17/0752	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {fully recoverable} 	21/121	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Construction of stressing jacks}
17/0754	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {remaining completely or partially embedded in the cast material} 	21/122	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Machines for joining reinforcing bars}
17/0755	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {the element consisting of several parts} 		
17/0757	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {fully recoverable} 		
17/0758	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {remaining completely or partially embedded in the cast material} 		
17/12	<ul style="list-style-type: none"> <ul style="list-style-type: none"> with arms engaging the forms 		
17/14	<ul style="list-style-type: none"> Bracing or strutting arrangements for formwalls; Devices for aligning forms (E04G 25/00 takes precedence; {connecting and aligning E04G 17/04}) 		
17/16	<ul style="list-style-type: none"> 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 		
17/18	<ul style="list-style-type: none"> Devices for suspending or anchoring form elements to girders placed in ceilings, e.g. hangers 		

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 <i>in situ</i> 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)}
21/1866	. . . . . {for making arches}	21/3223	. . . {Means supported by building floors or flat roofs, e.g. safety railings}
21/1875	. . . . . {for making curved walls (E04G 11/06 takes precedence)}	21/3228	. . . . {Folding railings for flat roof edge, e.g. to hide the railings from view when not in use}
21/1883	. . . . . {Spacers, e.g. to have a constant spacing between courses of masonry}	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}
		21/3252	. . . {Protections, e.g. cover, caps, against impaling on starter reinforcement bars}

2021/3257	. . . {specific for floors made of prefabricated hollow plates}	2023/0255	. . . . {whereby the fiber reinforced plastic elements are stressed}
21/3261	. . {Safety-nets; Safety mattresses; Arrangements on buildings for connecting safety-lines (jumping-sheets, jumping-mattresses A62B 1/22)}	2023/0259	. . . . {Devices specifically adapted to stress the fiber reinforced plastic elements}
21/3266	. . . {Safety nets}	2023/0262	. . . . {Devices specifically adapted for anchoring the fiber reinforced plastic elements, e.g. to avoid peeling off}
21/3271	. . . {Safety mattresses}	23/0266	. . {Enlarging}
21/3276	. . . {Arrangements on buildings for connecting safety-lines (fastening devices for devices for lowering persons from buildings A62B 1/04)}	23/027	. . . {Loft conversion by truss modification}
21/328	. . . . {fastened to the roof covering or insulation}	23/0274	. . {Temporary shoring of wall opening}
21/3285	. . . . {fastened to standing seams of the roof covering}	23/0277	. . {Repairing or restoring window or door frames (door frames E06B 1/00 , window frames E06B 3/00)}
21/329	. . . . {with measures for dampening the fall}	23/0281	. . {Repairing or restoring roofing or roof covering (roof covering E04D 3/00)}
21/3295	. . . {Guide tracks for safety lines (arrangements for bypassing safety track supports without life line disconnection A62B 35/0087)}	23/0285	. . {Repairing or restoring flooring (flooring E04F 15/00)}
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)	23/0288	. . {Repairing or restoring floor slabs (floors E04B 5/00)}
	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.	23/0292	. . {Repairing or restoring balconies (balcony structures E04B 1/003)}
23/002	. {Arrangements for cleaning building facades}	23/0296	. . {Repairing or restoring facades (covering or linings, e.g. for walls E04F 13/00)}
23/004	. . {with arrangements for collecting waste water or cleaning products}	23/04	. Propping of endangered or damaged buildings or building parts, e.g. with respect to air-raid action (struts E04G 25/00)
23/006	. {Arrangements for removing of previously fixed floor coverings}	23/06	. Separating, lifting, removing of buildings; Making a new sub-structure
23/008	. {Working measures on existing vertical ducts, e.g. chimneys, garbage chutes}	23/065	. . {Lifting of buildings (E04G 21/163 takes precedence)}
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)}	23/08	. Wrecking of buildings (of fences E04H 17/26 ; {Demolition agents based on cementitious or like materials C04B 41/0009)}
23/0203	. . {Arrangements for filling cracks or cavities in building constructions}	23/081	. . {using hydrodemolition}
23/0207	. . . {in hollow structures, e.g. cavity walls}	23/082	. . {using shears, breakers, jaws and the like (metal-cutting or concrete-crushing implements mounted on backhoes E02F 3/965)}
23/0211	. . . {using injection}	23/083	. . {using vaporising wire technique (particular applications of blasting techniques F42D 3/00)}
23/0214	. . . {using covering strips}	23/084	. . {using breaker balls or the like}
23/0218	. . {Increasing or restoring the load-bearing capacity of building construction elements (E04G 23/0203 and E04G 23/0266 take precedence)}	2023/085	. . {crowbars specially adapted for wrecking wooden buildings}
23/0222	. . . {Replacing or adding wall ties}	2023/086	. . {of tanks, reservoirs or the like}
23/0225	. . . {of circular building elements, e.g. by circular bracing}	2023/087	. . {of chimneys, smoke stacks or the like}
23/0229	. . . {of foundations or foundation walls}	2023/088	. . {of window or door frames}
23/0233	. . . {of vaulted or arched building elements}	25/00	Shores or struts (specially designed for use in mines E21D 15/00 {; E04G 21/26, E04G 23/04 take precedence}); Chocks
23/0237	. . . {of storey floors}	2025/003	. {Supports therefor, e.g. tripods}
23/024	. . . {of basement floors}	2025/006	. {Heads therefor, e.g. pivotable}
23/0244	. . . {of beams at places of holes, e.g. drilled in them}	25/02	. non-telescopic
2023/0248	. . . {of elements made of wood}	25/04	. telescopic {(locking of telescopic systems in general F16B 7/10)}
2023/0251	. . . {by using fiber reinforced plastic elements}	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](#))**