

CPC COOPERATIVE PATENT CLASSIFICATION

E FIXED CONSTRUCTIONS

BUILDING

E04 BUILDING (layered materials, layered products in general [B32B](#))

E04D ROOF COVERINGS; SKY-LIGHTS; GUTTERS; ROOF-WORKING TOOLS (coverings of outer walls by plaster or other porous material [E04F 13/00](#))

NOTE

In this subclass, the following expression is used with the meaning indicated:

- "roof coverings" includes any similar kind of watertight covering against rain, snow, hail, or the like, for other parts of buildings

WARNINGS

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

E04D 3/3645	covered by	E04D 3/363
E04D 3/367	covered by	E04D 3/364
E04D 13/18	covered by	F24S 20/67 , H02S 20/23

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	Roof covering by making use of tiles, slates, shingles, or other small roofing elements (roofing supports {and underlayers} E04D 12/00)	1/24	• Roofing elements with cavities, e.g. hollow tiles (E04D 1/28 takes precedence)
2001/005	• {the roofing elements having a granulated surface}	1/26	• Strip-shaped roofing elements appearing as a row of shingles
1/02	• Grooved or vaulted roofing elements (E04D 1/28 , E04D 1/30 take precedence)	1/265	• • {the roofing elements being rigid, e.g. made of metal, wood or concrete}
1/025	• • {Diamond shaped and installed in diagonal lines}	1/28	• Roofing elements comprising two or more layers, e.g. for insulation
1/04	• • of ceramics, glass or concrete, with or without reinforcement	1/30	• Special roof-covering elements, e.g. ridge tiles, gutter tiles, gable tiles, ventilation tiles (E04D 3/40 , E04D 13/03 , E04D 13/14 take precedence)
1/045	• • • {Vaulted roofing elements laid alternately side-up and side-down, e.g. monks and nuns tiles}	2001/301	• • {at roof edges, e.g. intersections with walls}
1/06	• • of metal	2001/302	• • • {Gable tiles}
1/08	• • of plastics; {of asphalt; } of fibrous materials	2001/303	• • • {Eave tiles}
1/085	• • • {of wood}	2001/304	• • {at roof intersections, e.g. valley tiles, ridge tiles}
1/10	• • of specified materials {not covered by any one of groups E04D 1/04 - E04D 1/085 }, or of combinations of materials, {where at least one is} not covered by any one of groups E04D 1/04 - E04D 1/085	2001/305	• • • {Ridge or hip tiles}
1/12	• Roofing elements shaped as plain tiles or shingles, i.e. with flat outer surface (E04D 1/28 , E04D 1/30 take precedence)	2001/306	• • • • {Under-ridge tiles}
1/125	• • {Diamond shaped and installed in diagonal lines}	2001/307	• • {for passages in the roof surface}
1/14	• • of slate material, with or without fastening means	2001/308	• • {for special purposes not otherwise provided for, e.g. turfing tiles, step tiles}
1/16	• • of ceramics, glass or concrete, with or without reinforcement	2001/309	• • {Ventilation tiles}
1/18	• • of metal	1/34	• Fastenings for attaching roof-covering elements to the supporting elements
1/20	• • of plastics; {of asphalt; } of fibrous materials	1/3402	• • {for ridge or roofhip tiles}
1/205	• • • {of wood}	1/3405	• • {for eaves -, valley - or verge tiles}
1/22	• • of specified materials {not covered by any one of groups E04D 1/14 - E04D 1/205 }, or of combinations of materials, {where at least one is} not covered by any one of groups E04D 1/14 - E04D 1/205	2001/3408	• • {characterised by the fastener type or material}
		2001/3411	• • • {Metal wires or rods}
		2001/3414	• • • {Metal strips or sheet metal}
		2001/3417	• • • {Synthetic, composite or molded material}
		2001/342	• • • {Flexible filamentous ties, e.g. to be twisted or forming nets}
		2001/3423	• • • {Nails, rivets, staples or straps piercing or perforating the roof covering material}
		2001/3426	• • • {Threaded elements, e.g. screws or bolts}

E04D

2001/3429	. . . {Press-studs elements}	3/06	. . of glass or other translucent material; Fixing means therefor (fixing glass panes by means applicable to windows E06B 3/54)
2001/3432	. . . {Strips covering the gap between the roof covering elements}	2003/065	. . . {Corner- or point-supported glazing}
2001/3435	. . . {Adhesive, hardenable or heat-sensitive material}	3/08	. . . with metal glazing bars
2001/3438	. . . {Fasteners comprising several coating elements}	2003/0806	. . . . {the supporting section of the glazing bar consisting of one single extruded or rolled metal part}
2001/3441	. . . {Series of easily separable fasteners}	2003/0812	. . . . {the supporting section of the glazing bar consisting of one single bent or otherwise deformed sheetmetal}
2001/3444	. . {characterised by the roof covering or structure with integral or premounted fastening means}	2003/0818	. . . . {the supporting section of the glazing bar consisting of several parts, e.g. compound sections}
2001/3447	. . . {the fastening means being integral or premounted to the roof covering}	2003/0825	. . . . . {the metal section covered by parts of other material}
2001/345	. . . {the fastening means being integral or premounted to the roof structure}	2003/0831	. . . . . {Glazing gaskets of particular shape}
2001/3452	. . {characterised by the location of the fastening means}	2003/0837	. . . . . {Sections comprising intermediate parts of insulating material}
2001/3455	. . . {on the internal surface of the roof covering elements}	2003/0843	. . . . . {Clamping of the sheets or glass panes to the glazing bars by means of covering strips}
2001/3458	. . . {on the upper or lower transverse edges of the roof covering elements}	2003/085	. . . . . {locked by snap action}
2001/3461	. . . {on the lateral edges of the roof covering elements}	2003/0856	. . . . . {locked by screws, bolts or pins}
2001/3464	. . . {on the lateral corners of the roof covering elements for diagonally tiled roofs}	2003/0862	. . . . . {by means of separate clips or hooks}
2001/3467	. . . {through apertures, holes or slots}	2003/0868	. . . . . {Mutual connections and details of glazing bars}
2001/347	. . {characterised by the fastening pattern}	2003/0875	. . . . . {on the ridge of the roof or on intersecting roof parts}
2001/3473	. . . {fastening single roof elements to the roof structure with or without indirect clamping of neighbouring roof covering elements}	2003/0881	. . . . . {on the eaves of the roof}
2001/3476	. . . {the fastening means taking hold directly on adjacent elements of the same row and fastening them simultaneously to the roof structure}	2003/0887	. . . . . {Glazing bars for coverings consisting of more than one sheet or glass pane}
2001/3479	. . . {the fastening means taking hold directly on adjacent elements of the same row and fastening them only to each other}	2003/0893	. . . . . {Glazing bars comprising means for draining condensation water or infiltrated rainwater}
2001/3482	. . . {the fastening means taking hold directly on elements of succeeding rows and fastening them simultaneously to the structure}	3/14	. . . with glazing bars of other material, e.g. of glass
2001/3485	. . . {the fastening means taking hold directly on elements of succeeding rows and fastening them only to each other}	3/16	. . of metal
2001/3488	. . {characterised by the type of roof covering elements being fastened}	3/18	. . of specified materials, or of combinations of materials, not covered by any of groups E04D 3/04 , E04D 3/06 or E04D 3/16
2001/3491	. . . {made of flexible material, e.g. shingles}	3/24	. with special cross-section, e.g. with corrugations on both sides, with ribs, flanges, or the like (E04D 3/35 takes precedence)
2001/3494	. . . {made of rigid material having a flat external surface}	3/26	. . of concrete or ceramics
2001/3497	. . . {Spanish type tiles}	3/28	. . of glass {or other translucent material}
1/36	. Devices for sealing the spaces or joints between roof-covering elements (sealing joints not restricted to roof-covering elements E04B 1/68 ; {channels at the intersection of roof surfaces E04D 13/0445 })	2003/285	. . . {with specially profiled marginal portions for connecting purposes}
1/365	. . {Sealing strips between lateral sides of roof-covering elements}	3/30	. . of metal
3/00	Roof covering by making use of flat or curved slabs or stiff sheets (E04D 1/00 takes precedence; built-up roofs E04D 11/02)	3/32	. . of plastics, fibrous materials, or asbestos cement
3/02	. of plane slabs, slates, or sheets, or in which the cross-section is unimportant (E04D 3/35 takes precedence)	3/34	. . of specified materials, or of combinations of materials, not covered by any one of groups E04D 3/26 - E04D 3/32
3/04	. . of concrete or ceramics (of asbestos cement E04D 3/18)	3/35	. Roofing slabs or stiff sheets comprising two or more layers, e.g. for insulation {(self-supporting roofing slabs laminated with layers of insulating material E04B 7/22 ; insulating devices or arrangements in the roof covering E04D 13/16 ; connecting, fastening of double roof covering E04D 3/3608)}
		3/351	. . {at least one of the layers being composed of insulating material, e.g. fibre or foam material}
		3/352	. . . {at least one insulating layer being located between non-insulating layers, e.g. double skin slabs or sheets}
		3/354	. . . {more than one of the layers being composed of insulating material}

3/355	. . . {the insulating layers of adjacent slabs having cooperating edges}	3/40	. Slabs or sheets locally modified for auxiliary purposes, e.g. for resting on walls, for serving as guttering; Elements for particular purposes, e.g. ridge elements, specially designed for use in conjunction with slabs or sheets {(E04D 13/15 and E04D 13/174 take precedence; ridge sealing E04D 1/36; solar collectors F24S 20/67; photovoltaic devices H01L 31/00)}
3/357	. . {comprising hollow cavities}		
3/358	. . {with at least one of the layers being offset with respect to another layer}	3/405	. . {Wall copings}
3/36	. Connecting; Fastening	5/00	Roof covering by making use of flexible material, e.g. supplied in roll form (using stiff sheets E04D 3/00; gravelling of flat roofs E04D 7/00 {; granulated roof covering E04D 7/005}; built-up roofs E04D 11/02)
3/3601	. . {of roof covering supported by the roof structure with interposition of a insulating layer (E04D 3/3607, E04D 3/3608, E04D 3/361 - E04D 3/369 take precedence)}	NOTE	Group E04D 5/12 takes precedence over groups E04D 5/02 - E04D 5/10
3/3602	. . . {The fastening means comprising elongated profiles installed in or on the insulation layer}	5/02	. of materials impregnated with sealing substances, e.g. roofing felt
3/3603	. . . {the fastening means being screws or nails}	5/04	. by making use of metal foils
3/3605	. . {of roof covering supported directly by the roof structure (E04D 3/3607, E04D 3/3608, E04D 3/361 - E04D 3/369 take precedence)}	5/06	. by making use of plastics
3/3606	. . . {the fastening means being screws or nails}	5/08	. by making use of other materials
3/3607	. . {the fastening means comprising spacer means adapted to the shape of the profiled roof covering}	5/10	. by making use of compounded or laminated materials, e.g. metal foils or plastic films coated with bitumen
3/3608	. . {for double roof covering or overroofing}	5/12	. specially modified, e.g. perforated, with granulated surface, with attached pads
	NOTE	5/14	. Fastening means therefor
	In groups E04D 3/361 - E04D 3/368, additional small fastening elements, e.g. nails, screws, are not to be considered to be separate connecting elements.	5/141	. . {characterised by the location of the fastening means}
3/361	. . by specially-profiled marginal portions of the slabs or sheets	5/142	. . . {along the edge of the flexible material}
2003/3612	. . . {Separate fastening elements fixed to the roof structure and comprising plastic parts for avoiding thermal bridges}	5/143	. . . {in the field of the flexible material}
2003/3615	. . . {Separate fastening elements fixed to the roof structure and consisting of parts permitting relative movement to each other, e.g. for thermal expansion}	5/144	. . {Mechanical fastening means}
2003/3617	. . . {with locking or snapping edges located in the thickness of the slab or sheet}	5/145	. . . {Discrete fastening means, e.g. discs or clips}
3/362	. . . by locking the edge of one slab or sheet within the profiled marginal portion of the adjacent slab or sheet, e.g. using separate connecting elements	5/146	. . . {Linear fastening means, e.g. strips}
3/363	. . . with snap action (E04D 3/366 takes precedence)	5/147	. . . {not perforating the flexible material}
3/364	. . . {by folding of the edges}	5/148	. . {fastening by gluing}
3/365	. . by simple overlapping of the marginal portions with use of separate connecting elements, e.g. hooks or bolts for corrugated sheets	5/149	. . {fastening by welding}
3/366	. . by closing the space between the slabs or sheets by gutters, bulges, or bridging elements, e.g. strips	7/00	Roof covering {exclusively consisting of} sealing masses applied in situ; Gravelling of flat roofs
3/368	. . by forcing together the marginal portions of adjacent slabs or sheets	7/005	. {characterised by loose or embedded gravel or granules as an outer protection of the roof covering}
3/369	. . by welding of the marginal portions of adjacent slabs or sheets {also by soldering, glueing}	9/00	Roof covering by using straw, thatch, or like materials (impregnation against incendiary damage B27K)
3/38	. Devices for sealing spaces or joints between roof-covering elements (E04D 3/36 takes precedence; sealing joints not restricted to roof-covering elements E04B 1/68)	11/00	Roof covering, as far as not restricted to features covered by only one of groups E04D 1/00 - E04D 9/00; Roof covering in ways not provided for by groups E04D 1/00 - E04D 9/00, {e.g. built-up roofs, elevated load-supporting roof coverings}
		11/002	. {consisting of two or more layers, at least one of the layers permitting turfing of the roof}
		11/005	. {Supports for elevated load-supporting roof coverings}
		11/007	. . {Height-adjustable spacers}

11/02	• Build-up roofs, i.e. consisting of two or more layers bonded together <i>in situ</i> , at least one of the layers being of watertight composition (gravelling of flat roofs E04D 7/00 ; venting or ventilation E04D 13/17)	13/0358	• . . . {the parts moving, in their own plane, e.g. rolling or sliding, or moving in parallel planes with or without an additional movement, e.g. both pivoting and rolling or sliding}
12/00	Non-structural supports for roofing materials, e.g. battens, boards (E04D 11/02 {and E04D 13/16 } take precedence; {self-supporting slabs with non-structural supports for roofing materials E04B 7/205 })	13/04	• Roof drainage; Drainage fittings in flat roofs, {balconies or the like} (gutter tiles E04D 1/30 ; gutter slabs E04D 3/40 ; {vessels for collecting rainwater E03B 3/03 ; } street gullies E03F 5/04)
12/002	• {Sheets of flexible material, e.g. roofing tile underlay}	13/0404	• . . {Drainage on the roof surface}
12/004	• {Battens}	13/0409	• . . . {Drainage outlets, e.g. gullies}
12/006	• . . {Batten-supporting means}	2013/0413	• {Strainers for drainage outlets}
12/008	• . . . {Ridge-batten brackets}	2013/0418	• {with de-icing devices or snow melters}
13/00	Special arrangements or devices in connection with roof coverings; {Protection against birds}; Roof drainage; {Sky-lights} (ventilation tiles E04D 1/30 ; ventilation slabs E04D 3/40 ; internal channels E04F 17/00 ; elements therefor, see the relevant groups)	2013/0422	• {for draining water above the roof level, e.g. gullies with overflow ports}
13/002	• {Provisions for preventing vegetational growth, e.g. fungi, algae or moss}	2013/0427	• {with means for controlling the flow in the outlet}
13/004	• {Protection against birds, mice or the like (scaring devices for birds in general A01M 29/00)}	13/0431	• {with horizontal evacuation over the border of the roof}
13/006	• {Provisions for detecting water leakage}	2013/0436	• {with sealing means}
13/008	• {Provisions for reducing rain noise}	2013/044	• {on multiple levels}
13/02	• Roof-covering aspects of dormer windows (E04D 13/14 takes precedence; structures therefor E04B 7/18)	13/0445	• . . . {Drainage channels}
13/03	• Sky-lights; Domes; Ventilating sky-lights (E04D 13/14 takes precedence; structures therefor, (e.g. dormer windows) E04B 7/18 ; {saw-tooth roofs with light-transmission E04B 7/12 })	2013/045	• {on inclined roofs}
13/0305	• . . {Supports or connecting means for sky-lights of flat or domed shape}	2013/0454	• {at the intersection of roof surfaces, e.g. roof valleys}
13/031	• . . . {characterised by a frame for connection to an inclined roof}	13/0459	• . . . {Drainage borders, e.g. dripping edges, gravel stops or dispersers}
13/0315	• . . . {characterised by a curb frame}	2013/0463	• {Dispersers}
13/032	• . . {Supports or connecting means for sky-lights of vaulted shape}	2013/0468	• {Drip edges}
13/0325	• . . {provided with ventilating means (roof ventilation F24F 7/02)}	2013/0472	• {Gravel stops}
13/033	• . . {provided with means for controlling the light-transmission or the heat-reflection, (e.g. shields, reflectors, cleaning devices)}	13/0477	• . . . {Underroof drainage layers (layers permitting turfing of the roof E04D 11/002)}
13/0335	• . . {Skylight guards, security devices protecting skylights or preventing objects or persons from falling through skylight openings}	13/0481	• . . . {Drainage guiding provisions, e.g. deflectors or stimulation by inclined surfaces}
2013/034	• . . {Daylight conveying tubular skylights}	2013/0486	• {Deflectors}
2013/0345	• . . . {with skylight shafts extending from roof to ceiling}	2013/049	• . . . {of condensation water or infiltrated rainwater}
13/035	• . . characterised by having movable parts {(preventing the spread of fire A62C 3/00 ; roof structures with movable roof parts E04B 7/16 ; operating mechanisms for sky-lights E05F 11/00 ; automatically acting closers E05F 17/00)}	2013/0495	• . . . {to storage tanks}
13/0351	• . . . {the parts pivoting about a fixed axis}	13/064	• . . Gutters ({ drainage channels on the roof surface E04D 13/0445 ; gutters for greenhouses A01G 9/1476 })
13/0352	• {the parts being of domed or pyramidal shape}	13/0641	• . . . {Gutter ends}
13/0354	• {the parts being flat}	13/0643	• . . . {Gutter corners}
13/0355	• {The parts being of vaulted shape}	13/0645	• . . . {Connections between gutter and down pipe}
13/0357	• . . . {the parts pivoting about an axis supported on a hinged frame or arms}	13/0646	• . . . {made of concrete or stone-like material}
		13/0648	• . . . {comprising provisions for heat insulation, e.g. an insulation layer}
		13/068	• . . . Means for fastening gutter parts together
		13/0685	• {in combination with hanging means}
		13/072	• . . . Hanging means (in combination with means for fastening gutter parts together E04D 13/0685)
		13/0722	• {extending mainly under the gutter}
		13/0725	• {situated above or inside the gutter}
		13/0727	• {situated mainly at the rear side of the gutter}
		13/076	• . . Devices or arrangements for removing snow, ice or debris from gutters or for preventing accumulation thereof
		13/0762	• . . . {De-icing devices or snow melters}
		13/0765	• . . . {Cleaning tools}
		13/0767	• . . . {Strainers at connection between gutter and down pipe}
		13/08	• . Down pipes; Special clamping means therefor (clamping pipes in general F16B, F16L)

2013/0806	. . . {Details of lower end of down pipes, e.g. connection to water disposal system}	13/16	. Insulating devices or arrangements in so far as the roof covering is concerned, {e.g. characterised by the material or composition of the roof insulating material or its integration in the roof structure}
2013/0813	. . . . {Water diverters}	13/1606	. {Insulation of the roof covering characterised by its integration in the roof structure (self-supporting insulating slabs E04B 7/22 , E04B 7/225)}
2013/082	. . . {Down pipe branches}	13/1612	. . . {the roof structure comprising a supporting framework of roof purlins or rafters}
2013/0826	. . . {Passages of down pipes through walls or floors}	13/1618	. . . . {with means for fixing the insulating material between the roof covering and the upper surface of the roof purlins or rafters}
2013/0833	. . . {Elbow pieces}	13/1625	. . . . {with means for supporting the insulating material between the purlins or rafters (insulating layers disposed between two longitudinal supporting elements E04B 1/7654)}
2013/084	. . . {Means for fixing down pipes to structure}	13/1631	. . . . . {the means deriving from the nature or the shape of the insulating material itself}
2013/0846	. . . {Interconnecting down pipe parts}	13/1637	. . . . {the roof purlins or rafters being mainly insulated from the interior, e.g. the insulating material being fixed under or suspended from the supporting framework}
2013/0853	. . . {Valves for controlling the rain water flow}	13/1643	. . . {the roof structure being formed by load bearing corrugated sheets, e.g. profiled sheet metal roofs}
2013/086	. . . {Filters}	13/165	. . . . {Double skin roofs}
2013/0866	. . . {Access opening for cleaning; Devices for avoiding cumulation of debris}	13/1656	. . . . {Closure strips or elements filling the spaces between the corrugated sheets and a supporting wall}
2013/0873	. . . {Rain water reservoirs integrated in down pipes}	13/1662	. . . {Inverted roofs or exteriorly insulated roofs}
2013/088	. . . {De-icing devices or snow melters}	13/1668	. . . {the insulating material being masses or granules applied <i>in situ</i> }
2013/0886	. . . {Devices for preventing climbing on down pipes}	13/1675	. . . . {on saddle-roofs or inclined roof surfaces}
2013/0893	. . . {incorporated in building structure}	13/1681	. . . {Insulating of pre-existing roofs with or without ventilating arrangements}
13/10	. Snow traps {; Removing snow from roofs; Snow melters}	13/1687	. . {the insulating material having provisions for roof drainage}
13/103	. . {De-icing devices or snow melters (for drainage outlets E04D 13/0409 , for gutters E04D 13/0762 , for down pipes E04D 13/08)}	13/1693	. . . {the upper surface of the insulating material forming an inclined surface}
13/106	. . {Snow removing devices (for gutters E04D 13/076)}	13/17	. Ventilation of roof coverings not otherwise provided for (ventilation of rooms or spaces F24F)
13/12	. Devices or arrangements allowing walking on the roof or in the gutter	13/172	. . {Roof insulating material with provisions for or being arranged for permitting ventilation of the roof covering}
13/14	. Junctions of roof sheathings to chimneys or other parts extending above the roof	13/174	. . {on the ridge of the roof}
13/1407	. . {for flat roofs}	13/176	. . . {formed by flexible material suitable to be rolled up}
13/1415	. . . {Junctions to walls extending above the perimeter of the roof (trimming strips, edge strips or fascias retaining the roof sheathing E04D 13/155)}	13/178	. . {on the eaves of the roof}
2013/1422	. . {Parapet building elements for retaining the roof flashing}	15/00	Apparatus or tools for roof working
13/143	. . with ventilating means {in junctions of roof sheathings to parts extending above the roof}	15/003	. {for removing roof material (for floor coverings E04G 23/006)}
13/147	. . specially adapted for inclined roofs {(trays for cavity walls E04B 1/70)}	15/006	. {for cleaning the roof (for cleaning gutters E04D 13/0765 ; for removing snow from roofs E04D 13/106)}
13/1471	. . . {using a hinge mechanism for adaptation to the inclined roof}	15/02	. for roof coverings comprising tiles, shingles, or like roofing elements {(E04D 15/003 takes precedence)}
13/1473	. . . {specially adapted to the cross-section of the parts extending above the roof}	15/025	. . {Templates, gauges or spacers for installing roof tiles or roof laths (templates for rafters E04G 21/1891)}
13/1475	. . . . {wherein the parts extending above the roof have a generally rectangular cross-section}	15/04	. for roof coverings comprising slabs, sheets or flexible material
13/1476	. . . . {wherein the parts extending above the roof have a generally circular cross-section}	2015/042	. . {Fixing to the roof supporting structure}
13/1478	. . . {Junctions to walls extending above the roof}		
13/15	. Trimming strips; Edge strips; Fascias; {Expansion joints for roofs (wall copings E04D 3/405 ; drainage borders E04D 13/0459 ; joints in general E04B 1/68)}		
13/151	. . {Expansion joints for roofs}		
13/152	. . with ventilating means {in soffits or fascias; (on the eaves of the roof E04D 13/178)}		
13/155	. . retaining the roof sheathing		
13/158	. . covering the overhang at the eave side, e.g. soffits, or the verge of saddle roofs		
13/1585	. . . {covering the verge of saddle roofs (gable tiles E04D 1/30)}		

E04D

- 2015/045 . . . {by nailing}
- 2015/047 . . . {by screwing}
- 15/06 . for handling roofing or sealing material in roll form
- 15/07 . for handling roofing or sealing material in bulk form