

CPC COOPERATIVE PATENT CLASSIFICATION

E FIXED CONSTRUCTIONS

BUILDING

E04 BUILDING

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 {or underlayers} [E04D 12/00](#))

WARNING

Groups [E04D 1/00-E04D 2001/3497](#) are impacted by reclassification into groups [E04D 1/29](#), [E04D 1/2907](#), [E04D 1/2914](#), [E04D 1/2916](#), [E04D 1/2918](#), [E04D 1/2921](#), [E04D 1/2928](#), [E04D 1/2935](#), [E04D 1/2942](#), [E04D 1/2949](#), [E04D 1/2956](#), [E04D 1/2963](#), and [E04D 1/2984](#).

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

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| <p>2001/005</p> <p>1/02</p> <p>1/025</p> <p>1/04</p> <p>1/045</p> <p>1/06</p> <p>1/08</p> <p>1/085</p> <p>1/10</p> <p>1/12</p> <p>1/125</p> <p>1/14</p> | <ul style="list-style-type: none"> • {the roofing elements having a granulated surface} • Grooved or vaulted roofing elements (E04D 1/28, E04D 1/30 take precedence) • . . {Diamond shaped and installed in diagonal lines} • . . of ceramics, glass or concrete, with or without reinforcement • . . . {Vaulted roofing elements laid alternately side-up and side-down, e.g. monks and nuns tiles} • . . of metal • . . of plastics; {of asphalt; } of fibrous materials • . . . {of wood} • . . 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} • Roofing elements shaped as plain tiles or shingles, i.e. with flat outer surface (E04D 1/28, E04D 1/30 take precedence) • . . {Diamond shaped elements specially adapted for being installed in diagonal lines} • . . of slate material, with or without fastening means |
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| <p>1/16</p> <p>1/18</p> <p>1/20</p> <p>1/205</p> <p>1/22</p> <p>1/23</p> <p>1/24</p> <p>1/26</p> <p>1/265</p> <p>1/28</p> <p>1/29</p> | <ul style="list-style-type: none"> • . . of ceramics, glass or concrete, with or without reinforcement • . . of metal • . . of plastics; {of asphalt; } of fibrous materials • . . . {of wood} • . . 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} • . . {with tapered thickness} • Roofing elements with cavities, e.g. hollow tiles (E04D 1/28 takes precedence) • Strip-shaped roofing elements {simulating a repetitive pattern, e.g.} appearing as a row of shingles • . . {the roofing elements being rigid, e.g. made of metal, wood or concrete} • Roofing elements comprising two or more layers, e.g. for insulation • {Means for connecting or fastening adjacent roofing elements} |
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WARNING

Groups [E04D 1/29](#) - [E04D 1/2984](#) are incomplete pending reclassification of documents from groups [E04D 1/00](#) - [E04D 2001/3497](#).

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

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| <p>1/2907</p> <p>1/2914</p> | <ul style="list-style-type: none"> • . . {by interfitted sections} • . . . {having fastening means or anchors at juncture of adjacent roofing elements} |
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- 1/2916 {the fastening means taking hold directly on adjacent elements of the same row}
- 1/2918 {the fastening means taking hold directly on adjacent elements of succeeding rows}
- 1/2921 . . . {having resilient detents adapted to be biased to a position to resist separation}
- 1/2928 . . . {having slits receiving marginal edge of adjacent section}
- 1/2935 . . . {folded, rolled, or indented *in situ*}
- 1/2942 . . . {having folded sections receiving interfitted part of adjacent section}
- 1/2949 . . . {having joints with fluid-handling feature, e.g. a fluid channel for draining}
- 1/2956 . . . {having tongues and grooves}
- 1/2963 . . . {having laminated layers overlapping adjacent sections}
- 1/2984 . . {with spacing or space-forming features, e.g. braces, fillers or drains}
- 1/30 . Special roof-covering elements, e.g. ridge tiles, gutter tiles, gable tiles, ventilation tiles ([E04D 3/40 takes precedence](#))
- 2001/301 . . {at roof edges, e.g. intersections with walls}
- 2001/302 . . . {Gable tiles}
- 2001/303 . . . {Eave tiles}
- 2001/304 . . {at roof intersections, e.g. valley tiles, ridge tiles}
- 2001/305 . . . {Ridge or hip tiles}
- 2001/306 {Under-ridge tiles}
- 2001/307 . . {for passages in the roof surface}
- 2001/308 . . {for special purposes not otherwise provided for, e.g. turfing tiles, step tiles}
- 2001/309 . . {Ventilation tiles}
- 1/34 . Fastenings for attaching roof-covering elements to the supporting elements
- 1/3402 . . {for ridge or roofhip tiles}
- 1/3405 . . {for eaves, valley, or verge tiles}
- 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}
- 2001/3429 . . . {Press-studs elements or hook and loop elements}
- 2001/3432 . . . {Strips covering the gap between the roof covering elements}
- 2001/3435 . . . {Adhesive, hardenable or heat-sensitive material}
- 2001/3438 . . . {Fasteners comprising several coating elements}
- 2001/3441 . . . {Series of easily separable fasteners}
- 2001/3444 . . {characterised by the roof covering or structure with integral or premounted fastening means}
- 2001/3447 . . . {the fastening means being integral or premounted to the roof covering}
- 2001/345 . . . {the fastening means being integral or premounted to the roof structure}
- 2001/3452 . . {characterised by the location of the fastening means}
- 2001/3455 . . . {on the internal surface of the roof covering elements}
- 2001/3458 . . . {on the upper or lower transverse edges of the roof covering elements}
- 2001/3461 . . . {on the lateral edges of the roof covering elements}
- 2001/3464 . . . {on the lateral corners of the roof covering elements for diagonally tiled roofs}
- 2001/3467 . . . {through apertures, holes or slots}
- 2001/347 . . {characterised by the fastening pattern}
- 2001/3473 . . . {fastening single roof elements to the roof structure with or without indirect clamping of neighbouring roof covering elements}
- 2001/3476 . . . {the fastening means taking hold directly on adjacent elements of the same row and fastening them simultaneously to the roof structure}
- 2001/3482 . . . {the fastening means taking hold directly on elements of succeeding rows and fastening them simultaneously to the structure}
- 2001/3488 . . {characterised by the type of roof covering elements being fastened}
- 2001/3491 . . . {made of flexible material, e.g. shingles}
- 2001/3494 . . . {made of rigid material having a flat external surface}
- 2001/3497 . . . {Spanish type tiles}
- 1/36 . Devices for sealing the spaces or joints between roof-covering elements ([sealing joints not restricted to roof-covering elements E04B 1/68; \(channels at the intersection of roof surfaces E04D 13/0445\)](#))
- 1/365 . . {Sealing strips between lateral sides of roof-covering elements}
- 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](#))**
- 3/02 . of plane slabs, slates, or sheets, or in which the cross-section is unimportant ([E04D 3/35 takes precedence](#))
- 3/04 . . of concrete or ceramics ([of asbestos cement E04D 3/18](#))
- 3/06 . . of glass or other translucent material; Fixing means therefor ([fixing glass panes by means applicable to windows E06B 3/54](#))
- 2003/065 . . . {Corner- or point-supported glazing}
- 3/08 . . . with metal glazing bars
- 2003/0806 {the supporting section of the glazing bar consisting of one single extruded or rolled metal part}
- 2003/0812 {the supporting section of the glazing bar consisting of one single bent or otherwise deformed sheetmetal}
- 2003/0818 {the supporting section of the glazing bar consisting of several parts, e.g. compound sections}
- 2003/0825 {the metal section covered by parts of other material}
- 2003/0831 {Glazing gaskets of particular shape}
- 2003/0837 {Sections comprising intermediate parts of insulating material}
- 2003/0843 {Clamping of the sheets or glass panes to the glazing bars by means of covering strips}
- 2003/085 {locked by snap action}
- 2003/0856 {locked by screws, bolts or pins}
- 2003/0862 {by means of separate clips or hooks}

2003/0868	. . . . {Mutual connections and details of glazing bars}	screws, are not to be considered to be separate connecting elements.
2003/0875	. . . . {on the ridge of the roof or on intersecting roof parts}	3/361 . . by specially-profiled marginal portions of the slabs or sheets
2003/0881	. . . . {on the eaves of the roof}	2003/3612 . . . {Separate fastening elements fixed to the roof structure and comprising plastic parts for avoiding thermal bridges}
2003/0887	. . . . {Glazing bars for coverings consisting of more than one sheet or glass pane}	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}
2003/0893	. . . . {Glazing bars comprising means for draining condensation water or infiltrated rainwater}	2003/3617 . . . {with locking or snapping edges located in the thickness of the slab or sheet}
3/14	. . . with glazing bars of other material, e.g. of glass	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
3/16	. . of metal	3/363 . . . with snap action (E04D 3/366 takes precedence)
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	3/364 . . . {by folding of the edges}
3/24	. with special cross-section, e.g. with corrugations on both sides, with ribs, flanges, or the like (E04D 3/35 takes precedence)	3/365 . . by simple overlapping of the marginal portions with use of separate connecting elements, e.g. hooks or bolts for corrugated sheets
3/26	. . of concrete or ceramics	3/366 . . by closing the space between the slabs or sheets by gutters, bulges, or bridging elements, e.g. strips
3/28	. . of glass {or other translucent material}	3/368 . . by forcing together the marginal portions of adjacent slabs or sheets
2003/285	. . . {with specially profiled marginal portions for connecting purposes}	3/369 . . by welding of the marginal portions of adjacent slabs or sheets {also by soldering, glueing}
3/30	. . of metal	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)
3/32	. . of plastics, fibrous materials, or asbestos cement	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)}
3/34	. . of specified materials, or of combinations of materials, not covered by any one of groups E04D 3/26 - E04D 3/32	3/405 . . {Wall copings}
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)}	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)
3/351	. . {at least one of the layers being composed of insulating material, e.g. fibre or foam material}	NOTE
3/352	. . . {at least one insulating layer being located between non-insulating layers, e.g. double skin slabs or sheets}	Group E04D 5/12 takes precedence over groups E04D 5/02 - E04D 5/10
3/354	. . . {more than one of the layers being composed of insulating material}	5/02 . . of materials impregnated with sealing substances, e.g. roofing felt
3/355	. . . {the insulating layers of adjacent slabs having cooperating edges}	5/04 . . by making use of metal foils
3/357	. . {comprising hollow cavities}	5/06 . . by making use of plastics
3/358	. . {with at least one of the layers being offset with respect to another layer}	5/08 . . by making use of other materials
3/36	. Connecting; Fastening	5/10 . . by making use of compounded or laminated materials, e.g. metal foils or plastic films coated with bitumen
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)}	5/12 . . specially modified, e.g. perforated, with granulated surface, with attached pads
3/3602	. . . {The fastening means comprising elongated profiles installed in or on the insulation layer}	5/14 . . Fastening means therefor
3/3603	. . . {the fastening means being screws or nails}	
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)}	
3/3606	. . . {the fastening means being screws or nails}	
3/3607	. . {the fastening means comprising spacer means adapted to the shape of the profiled roof covering}	
3/3608	. . {for double roof covering or overroofing}	

NOTE

In groups E04D 3/361 - E04D 3/368, additional small fastening elements, e.g. nails,

5/141	. . {characterised by the location of the fastening means}	13/0305	. . {Supports or connecting means for sky-lights of flat or domed shape}
5/142	. . . {along the edge of the flexible material}	13/031	. . . {characterised by a frame for connection to an inclined roof}
5/143	. . . {in the field of the flexible material}	13/0315	. . . {characterised by a curb frame}
5/144	. . {Mechanical fastening means}	13/032	. . {Supports or connecting means for sky-lights of vaulted shape}
5/145	. . . {Discrete fastening means, e.g. discs or clips}	13/0325	. . {provided with ventilating means (roof ventilation F24F 7/02)}
5/146	. . . {Linear fastening means, e.g. strips}	13/033	. . {provided with means for controlling the light-transmission or the heat-reflection, (e.g. shields, reflectors, cleaning devices)}
5/147	. . . {not perforating the flexible material}	13/0335	. . {Skylight guards, security devices protecting skylights or preventing objects or persons from falling through skylight openings}
5/148	. . {fastening by gluing}	2013/034	. . {Daylight conveying tubular skylights}
5/149	. . {fastening by welding}	2013/0345	. . . {with skylight shafts extending from roof to ceiling}
7/00	Roof covering {exclusively consisting of} sealing masses applied in situ; Graveling of flat roofs	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)}
7/005	. {characterised by loose or embedded gravel or granules as an outer protection of the roof covering}	13/0351	. . . {the parts pivoting about a fixed axis}
9/00	Roof covering by using straw, thatch, or like materials (impregnation against incendiary damage B27K)	13/0352	. . . . {the parts being of domed or pyramidal shape}
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}	13/0354	. . . . {the parts being flat}
11/002	. {consisting of two or more layers, at least one of the layers permitting turfing of the roof}	13/0355	. . . . {The parts being of vaulted shape}
11/005	. {Supports for elevated load-supporting roof coverings}	13/0357	. . . {the parts pivoting about an axis supported on a hinged frame or arms}
11/007	. . {Height-adjustable spacers}	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}
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)	13/04	. 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)
12/00	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})	13/0404	. . {Drainage on the roof surface}
12/002	. {Sheets of flexible material, e.g. roofing tile underlay}	13/0409	. . . {Drainage outlets, e.g. gullies}
12/004	. {Battens}	2013/0413	. . . . {Strainers for drainage outlets}
12/006	. . {Batten-supporting means}	2013/0418	. . . . {with de-icing devices or snow melters}
12/008	. . . {Ridge-batten brackets}	2013/0422	. . . . {for draining water above the roof level, e.g. gullies with overflow ports}
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)	2013/0427	. . . . {with means for controlling the flow in the outlet}
13/002	. {Provisions for preventing vegetational growth, e.g. fungi, algae or moss}	13/0431	. . . . {with horizontal evacuation over the border of the roof}
13/004	. {Protection against birds, mice or the like (scaring devices for birds in general A01M 29/00)}	2013/0436	. . . . {with sealing means}
13/006	. {Provisions for detecting water leakage}	2013/044	. . . . . {on multiple levels}
13/008	. {Provisions for reducing rain noise}	13/0445	. . . {Drainage channels}
13/02	. Roof-covering aspects of dormer windows (E04D 13/14 takes precedence; structures therefor E04B 7/18)	2013/045	. . . . {on inclined roofs}
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})	2013/0454	. . . . . {at the intersection of roof surfaces, e.g. roof valleys}
		13/0459	. . . {Drainage borders, e.g. dripping edges, gravel stops or dispersers}
		2013/0463	. . . . {Dispersers}
		2013/0468	. . . . {Drip edges}
		2013/0472	. . . . {Gravel stops}
		13/0477	. . . {Underroof drainage layers (layers permitting turfing of the roof E04D 11/002)}
		13/0481	. . . {Drainage guiding provisions, e.g. deflectors or stimulation by inclined surfaces}
		2013/0486	. . . . {Deflectors}

- 2013/049 . . . {of condensation water or infiltrated rainwater}
- 2013/0495 . . . {to storage tanks}
- 13/064 . . Gutters {(drainage channels on the roof surface [E04D 13/0445](#); gutters for greenhouses [A01G 9/1476](#))}
- 13/0641 . . . {Gutter ends}
- 13/0643 . . . {Gutter corners}
- 13/0645 . . . {Connections between gutter and down pipe}
- 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}
- 2013/0813 {Water diverters}
- 2013/082 . . . {Down pipe branches}
- 2013/0826 . . . {Passages of down pipes through walls or floors}
- 2013/0833 . . . {Elbow pieces}
- 2013/084 . . . {Means for fixing down pipes to structure}
- 2013/0846 . . . {Interconnecting down pipe parts}
- 2013/0853 . . . {Valves for controlling the rain water flow}
- 2013/086 . . . {Filters}
- 2013/0866 . . . {Access opening for cleaning; Devices for avoiding cumulation of debris}
- 2013/0873 . . . {Rain water reservoirs integrated in down pipes}
- 2013/088 . . . {De-icing devices or snow melters}
- 2013/0886 . . . {Devices for preventing climbing on down pipes}
- 2013/0893 . . . {incorporated in building structure}
- 13/10 . . Snow traps {; Removing snow from roofs; Snow melters}
- 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](#))}
- 13/106 . . {Snow removing devices (for gutters [E04D 13/076](#))}
- 13/12 . . Devices or arrangements allowing walking on the roof or in the gutter
- 13/14 . . Junctions of roof sheathings to chimneys or other parts extending above the roof
- 13/1407 . . {for flat roofs}
- 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](#))}
- 2013/1422 . . {Parapet building elements for retaining the roof flashing}
- 13/143 . . with ventilating means {in junctions of roof sheathings to parts extending above the roof}
- 13/147 . . specially adapted for inclined roofs {(trays for cavity walls [E04B 1/70](#))}
- 13/1471 . . . {using a hinge mechanism for adaptation to the inclined roof}
- 13/1473 . . . {specially adapted to the cross-section of the parts extending above the roof}
- 13/1475 {wherein the parts extending above the roof have a generally rectangular cross-section}
- 13/1476 {wherein the parts extending above the roof have a generally circular cross-section}
- 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](#))}
- 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}
- 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](#))}
- 13/1612 . . . {the roof structure comprising a supporting framework of roof purlins or rafters}
- 13/1618 {with means for fixing the insulating material between the roof covering and the upper surface of the roof purlins or rafters}
- 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](#))}
- 13/1631 {the means deriving from the nature or the shape of the insulating material itself}
- 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}
- 13/1643 . . . {the roof structure being formed by load bearing corrugated sheets, e.g. profiled sheet metal roofs}
- 13/165 {Double skin roofs}
- 13/1656 {Closure strips or elements filling the spaces between the corrugated sheets and a supporting wall}
- 13/1662 . . . {Inverted roofs or exteriorly insulated roofs}

E04D

- 13/1668 . . . {the insulating material being masses or granules applied in situ}
- 13/1675 {on saddle-roofs or inclined roof surfaces}
- 13/1681 . . . {Insulating of pre-existing roofs with or without ventilating arrangements}
- 13/1687 . . {the insulating material having provisions for roof drainage}
- 13/1693 . . . {the upper surface of the insulating material forming an inclined surface}
- 13/17 . . Ventilation of roof coverings not otherwise provided for ([ventilation of rooms or spaces F24F](#))
- 13/172 . . {Roof insulating material with provisions for or being arranged for permitting ventilation of the roof covering}
- 13/174 . . {on the ridge of the roof}
- 13/176 . . . {formed by flexible material suitable to be rolled up}
- 13/178 . . {on the eaves of the roof}
- 15/00 Apparatus or tools for roof working**
- 15/003 . {for removing roof material ([for floor coverings E04G 23/006](#))}
- 15/006 . {for cleaning the roof ([for cleaning gutters E04D 13/0765](#); [for removing snow from roofs E04D 13/106](#))}
- 15/02 . . for roof coverings comprising tiles, shingles, or like roofing elements {([E04D 15/003](#) takes precedence)}
- 15/025 . . {Templates, gauges or spacers for installing roof tiles or roof laths ([templates for rafters E04G 21/1891](#))}
- 15/04 . . for roof coverings comprising slabs, sheets or flexible material
- 2015/042 . . {Fixing to the roof supporting structure}
- 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