

CPC**COOPERATIVE PATENT CLASSIFICATION****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

WARNING

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

[E04D 3/3645](#) covered by [E04D 3/363](#)
[E04D 3/367](#) " " [E04D 3/364](#)
[E04D 13/18](#) " " [F24J 2/00](#), [H01L 31/048B](#)

E04D 1/00**Roof covering by making use of tiles, slates, shingles, or other small roofing elements** (roofing supports { and underlayers } [E04D 12/00](#))**E04D 2001/005**

- the roofing elements having a granulated surface

E04D 1/02

- Grooved or vaulted roofing elements ([E04D 1/28](#), [E04D 1/30](#) take precedence)

E04D 1/025

- { Diamond shaped and installed in diagonal lines }

E04D 1/04

- of ceramics, glass or concrete, with or without reinforcement

E04D 1/045

- { Vaulted roofing elements laid alternately side-up and side-down }

E04D 1/06

- of metal

E04D 1/08

- of plastics; { of asphalt; } of fibrous materials { or wood }

E04D 1/085

- { of wood }

E04D 1/10

- of specified materials { not covered by any one of groups [E04D 1/04](#) to [E04D 1/085](#) }, or of combinations of materials, { where at least one is } not covered by any one of groups [E04D 1/04](#) to [E04D 1/085](#)

E04D 1/12

- Roofing elements shaped as plain tiles or shingles, i.e. with flat outer surface ([E04D 1/28](#), [E04D 1/30](#) take precedence)

E04D 1/125

- { Diamond shaped and installed in diagonal lines }

E04D 1/14

- of slate material, with or without fastening means

E04D 1/16

- of ceramics, glass or concrete, with or without reinforcement

E04D 1/18

- of metal

E04D 1/20

- of plastics; { of asphalt; } of fibrous materials, or wood

E04D 1/205

- { of wood }

E04D 1/22

- of specified materials { not covered by any one of groups [E04D 1/14](#) to [E04D 1/205](#) }, or of combinations of materials, { where at least one is } not covered by any one of groups [E04D 1/14](#) to [E04D 1/205](#)

- E04D 1/24 . Roofing elements with cavities, e.g. hollow tiles ([E04D 1/28](#) takes precedence)
- E04D 1/26 . Strip-shaped roofing elements appearing as a row of shingles
- E04D 1/265 . . { the roofing elements being rigid, e.g. made of metal, wood or concrete }
- E04D 1/28 . Roofing elements comprising two or more layers, e.g. for insulation
- E04D 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)
- E04D 2001/301 . . at roof edges, e.g. intersections with walls
- E04D 2001/302 . . . Gable tiles
- E04D 2001/303 . . . Eave tiles
- E04D 2001/304 . . at roof intersections, e.g. valley tiles, ridge tiles
- E04D 2001/305 . . . Ridge or hip tiles
- E04D 2001/306 Under-ridge tiles
- E04D 2001/307 . . for passages in the roof surface
- E04D 2001/308 . . for special purposes not otherwise provided for, e.g. turfing tiles, step tiles
- E04D 2001/309 . . Ventilation tiles
- E04D 1/34 . Fastenings for attaching roof-covering elements to the supporting elements
- E04D 1/3402 . . { for ridge or roofhip tiles }
- E04D 1/3405 . . { for eaves -, valley - or verge tiles }
- E04D 2001/3408 . . characterised by the fastener type or material
- E04D 2001/3411 . . . Metal wires or rods
- E04D 2001/3414 . . . Metal strips or sheet metal
- E04D 2001/3417 . . . Synthetic, composite or molded material
- E04D 2001/342 . . . Flexible filamentous ties, e.g. to be twisted or forming nets
- E04D 2001/3423 . . . Nails, rivets, staples or straps piercing or perforating the roof covering material
- E04D 2001/3426 . . . Threaded elements
- E04D 2001/3429 . . . Press-studs elements
- E04D 2001/3432 . . . Strips covering the gap between the roof covering elements
- E04D 2001/3435 . . . Adhesive, hardenable or heat-sensitive material
- E04D 2001/3438 . . . Fasteners comprising several coating elements
- E04D 2001/3441 . . . Series of easily separable fasteners
- E04D 2001/3444 . . characterised by the roof covering or structure with integral or premounted fastening means
- E04D 2001/3447 . . . the fastening means being integral or premounted to the roof covering
- E04D 2001/345 . . . the fastening means being integral or premounted to the roof structure
- E04D 2001/3452 . . characterised by the location of the fastening means
- E04D 2001/3455 . . . on the internal surface of the roof covering elements
- E04D 2001/3458 . . . on the upper or lower transverse edges of the roof covering elements
- E04D 2001/3461 . . . on the lateral edges of the roof covering elements
- E04D 2001/3464 . . . on the lateral corners of the roof covering elements for diagonally tiled roofs
- E04D 2001/3467 . . . through apertures, holes or slots

- E04D 2001/347 . . characterised by the fastening pattern
- E04D 2001/3473 . . . fastening single roof elements to the roof structure with or without indirect clamping of neighbouring roof covering elements
- E04D 2001/3476 . . . the fastening means taking hold directly on adjacent elements of the same row and fastening them simultaneously to the roof structure
- E04D 2001/3479 . . . the fastening means taking hold directly on adjacent elements of the same row and fastening them only to each other
- E04D 2001/3482 . . . the fastening means taking hold directly on elements of succeeding rows and fastening them simultaneously to the structure
- E04D 2001/3485 . . . the fastening means taking hold directly on elements of succeeding rows and fastening them only to each other
- E04D 2001/3488 . . characterised by the type of roof covering elements being fastened
- E04D 2001/3491 . . . made of flexible material, e.g. shingles
- E04D 2001/3494 . . . made of rigid material having a flat external surface
- E04D 2001/3497 . . . Spanish type tiles

- E04D 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](#) })
- E04D 1/365 . . { [Sealing strips between lateral sides of roof-covering elements](#) }

- E04D 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](#))**

- E04D 3/02 . of plane slabs, slates, or sheets, or in which the cross-section is unimportant ([E04D 3/35](#) takes precedence)
- E04D 3/04 . . of concrete or ceramics (of [asbestos cement E04D 3/18](#))
- E04D 3/06 . . of glass or other translucent material; Fixing means therefor ([fixing glass panes by means applicable to windows E06B 3/54](#))
- E04D 2003/065 . . . Corner- or point-supported glazing
- E04D 3/08 . . . with metal glazing bars
- E04D 2003/0806 the supporting section of the glazing bar consisting of one single extruded or rolled metal part
- E04D 2003/0812 the supporting section of the glazing bar consisting of one single bent or otherwise deformed sheetmetal
- E04D 2003/0818 the supporting section of the glazing bar consisting of several parts, e.g. compound sections
- E04D 2003/0825 the metal section covered by parts of other material
- E04D 2003/0831 Glazing gaskets of particular shape
- E04D 2003/0837 Sections comprising intermediate parts of insulating material
- E04D 2003/0843 Clamping of the sheets or glass panes to the glazing bars by means of covering strips
- E04D 2003/085 locked by snap action
- E04D 2003/0856 locked by screws, bolts or pins
- E04D 2003/0862 by means of separate clips or hooks
- E04D 2003/0868 Mutual connections and details of glazing bars
- E04D 2003/0875 on the ridge of the roof or on intersecting roof parts

- E04D 2003/0881 on the eaves of the roof
- E04D 2003/0887 Glazing bars for coverings consisting of more than one sheet or glass pane
- E04D 2003/0893 Glazing bars comprising means for draining condensation water or infiltrated rainwater
- E04D 3/14 with glazing bars of other material, e.g. of glass
- E04D 3/16 of metal
- E04D 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](#)
- E04D 3/24 with special cross-section, e.g. with corrugations on both sides, with ribs, flanges, or the like ([E04D 3/35 takes precedence](#))
- E04D 3/26 of concrete or ceramics
- E04D 3/28 of glass { or other translucent material }
- E04D 2003/285 with specially profiled marginal portions for connecting purposes
- E04D 3/30 of metal
- E04D 3/32 of plastics, fibrous materials, or asbestos cement
- E04D 3/34 of specified materials, or of combinations of materials, not covered by any one of groups [E04D 3/26](#) to [E04D 3/32](#)
- E04D 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](#)) }
- E04D 3/351 { at least one of the layers being composed of insulating material, e.g. fibre or foam material }
- E04D 3/352 { at least one insulating layer being located between non-insulating layers, e.g. double skin slabs or sheets }
- E04D 3/354 { more than one of the layers being composed of insulating material }
- E04D 3/355 { the insulating layers of adjacent slabs having cooperating edges }
- E04D 3/357 { comprising hollow cavities }
- E04D 3/358 { with at least one of the layers being offset with respect to another layer }
- E04D 3/36 Connecting; Fastening
- E04D 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](#) to [E04D 3/369 take precedence](#)) }
- E04D 3/3602 { The fastening means comprising elongated profiles installed in or on the insulation layer }
- E04D 3/3603 { the fastening means being screws or nails }
- E04D 3/3605 { of roof covering supported directly by the roof structure ([E04D 3/3607](#), [E04D 3/3608](#), [E04D 3/361](#) to [E04D 3/369 take precedence](#)) }
- E04D 3/3606 { the fastening means being screws or nails }
- E04D 3/3607 { the fastening means comprising spacer means adapted to the shape of the profiled roof covering }
- E04D 3/3608 { for double roof covering or overroofing }

NOTE

In groups [E04D 3/361](#) to [E04D 3/368](#), additional small fastening elements,

e.g. nails, screws, are not to be considered to be separate connecting elements.

- E04D 3/361 . . by specially-profiled marginal portions of the slabs or sheets
- E04D 2003/3612 . . . Separate fastening elements fixed to the roof structure and comprising plastic parts for avoiding thermal bridges
- E04D 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
- E04D 2003/3617 . . . with locking or snapping edges located in the thickness of the slab or sheet
- E04D 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
- E04D 3/363 . . . with snap action ([E04D 3/366](#) takes precedence)
- E04D 3/364 . . . by folding of the edges
- E04D 3/365 . . by simple overlapping of the marginal portions with use of separate connecting elements, e.g. hooks or bolts for corrugated sheets
- E04D 3/366 . . by closing the space between the slabs or sheets by gutters, bulges, or bridging elements, e.g. strips
- E04D 3/368 . . by forcing together the marginal portions of adjacent slabs or sheets
- E04D 3/369 . . by welding of the marginal portions of adjacent slabs or sheets { also by soldering, glueing }

- E04D 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](#))

- E04D 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 [F24J 2/00](#); photovoltaic devices [H01L 31/00](#) })

- E04D 3/405 . . { Wall copings }

- E04D 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](#))**

NOTE

Group [E04D 5/12](#) takes precedence over groups [E04D 5/02](#) to [E04D 5/10](#)

- E04D 5/02 . of materials impregnated with sealing substances, e.g. roofing felt
- E04D 5/04 . by making use of metal foils
- E04D 5/06 . by making use of plastics
- E04D 5/08 . by making use of other materials
- E04D 5/10 . by making use of compounded or laminated materials, e.g. metal foils or plastic films coated with bitumen

- E04D 5/12 . specially modified, e.g. perforated, with granulated surface, with attached pads
- E04D 5/14 . Fastening means therefor
- E04D 5/141 .. { characterised by the location of the fastening means }
- E04D 5/142 ... { along the edge of the flexible material }
- E04D 5/143 ... { in the field of the flexible material }
- E04D 5/144 .. { Mechanical fastening means }
- E04D 5/145 ... { Discrete fastening means, e.g. discs or clips }
- E04D 5/146 ... { Linear fastening means, e.g. strips }
- E04D 5/147 ... { not perforating the flexible material }
- E04D 5/148 .. { fastening by gluing }
- E04D 5/149 .. { fastening by welding }

- E04D 7/00** **Roof covering { exclusively consisting of } sealing masses applied in situ; Graveling of flat roofs**
- E04D 7/005 . { characterised by loose or embedded gravel or granules as an outer protection of the roof covering }

- E04D 9/00** **Roof covering by using straw, thatch, or like materials (impregnation against incendiary damage [B27K](#))**

- E04D 11/00** **Roof covering, as far as not restricted to features covered by only one of groups [E04D 1/00](#) to [E04D 9/00](#); Roof covering in ways not provided for by groups [E04D 1/00](#) to [E04D 9/00](#), { e.g. built-up roofs, elevated load-supporting roof coverings }**
- E04D 11/002 . { consisting of two or more layers, at least one of the layers permitting turfing of the roof }
- E04D 11/005 . { Supports for elevated load-supporting roof coverings [M1207]
- E04D 11/007 .. { Height-adjustable spacers }
- E04D 11/02 . Build-up roofs, i.e. consisting of two or more layers bonded together in situ, at least one of the layers being of watertight composition ([graveling of flat roofs \[E04D 7/00\]\(#\); venting or ventilation \[E04D 13/17\]\(#\)](#))

- E04D 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](#) })**
- E04D 12/002 . { Sheets of flexible material, e.g. roofing tile underlay }
- E04D 12/004 . { Battens }
- E04D 12/006 .. { Batten-supporting means }
- E04D 12/008 ... { Ridge-batten brackets }

- E04D 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)

- E04D 13/002 . { Provisions for preventing vegetational growth, e.g. fungi, algae or moss }
- E04D 13/004 . { Protection against birds, mice or the like (scaring devices for birds in general [A01M 29/00](#)) }
- E04D 13/006 . { Provisions for detecting water leakage }
- E04D 13/008 . { Provisions for reducing rain noise }
- E04D 13/02 . Roof-covering aspects of dormer windows ([E04D 13/14](#) takes precedence; structures therefor [E04B 7/18](#))
- E04D 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](#) })
- E04D 13/0305 .. { Supports or connecting means for sky-lights of flat or domed shape }
- E04D 13/031 ... { characterised by a frame for connection to an inclined roof }
- E04D 13/0315 ... { characterised by a curb frame }
- E04D 13/032 .. { Supports or connecting means for sky-lights of vaulted shape }
- E04D 13/0325 .. { provided with ventilating means (roof ventilation [F24F 7/02](#)) }
- E04D 13/033 .. { provided with means for controlling the light-transmission or the heat-reflection, (e.g. shields, reflectors, cleaning devices) }
- E04D 13/0335 .. { Skylight guards, security devices protecting skylights or preventing objects or persons from falling through skylight openings }
- E04D 2013/034 .. Daylight conveying tubular skylights
- E04D 2013/0345 ... with skylight shafts extending from roof to ceiling
- E04D 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](#)) }
- E04D 13/0351 ... { the parts pivoting about a fixed axis }
- E04D 13/0352 { the parts being of domed or pyramidal shape }
- E04D 13/0354 { the parts being flat }
- E04D 13/0355 { The parts being of vaulted shape }
- E04D 13/0357 ... { the parts pivoting about an axis supported on a hinged frame or arms }
- E04D 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 }
- E04D 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](#))
- E04D 13/0404 .. { Drainage on the roof surface }
- E04D 13/0409 ... { Drainage outlets, e.g. gullies }
- E04D 2013/0413 Strainers for drainage outlets

E04D 2013/0418	....	with de-icing devices or snow melters
E04D 2013/0422	....	for draining water above the roof level, e.g. gullies with overflow ports
E04D 2013/0427	....	with means for controlling the flow in the outlet
E04D 13/0431	....	{ with horizontal evacuation over the border of the roof }
E04D 2013/0436	....	with sealing means
E04D 2013/044	.....	on multiple levels
E04D 13/0445	...	{ Drainage channels }
E04D 2013/045	....	on inclined roofs
E04D 2013/0454	.....	at the intersection of roof surfaces, e.g. roof valleys
E04D 13/0459	...	{ Drainage borders, e.g. dripping edges, gravel stops or dispersers }
E04D 2013/0463	....	Dispersers
E04D 2013/0468	....	Drip edges
E04D 2013/0472	....	Gravel stops
E04D 13/0477	...	{ Underroof drainage layers (layers permitting turfing of the roof E04D 11/002) }
E04D 13/0481	...	{ Drainage guiding provisions, e.g. deflectors or stimulation by inclined surfaces }
E04D 2013/0486	....	Deflectors
E04D 2013/049	...	of condensation water or infiltrated rainwater
E04D 2013/0495	...	to storage tanks
E04D 13/064	..	Gutters { drainage channels on the roof surface E04D 13/0445 ; gutters for greenhouses A01G 9/1476 }
E04D 13/0641	...	{ Gutter ends }
E04D 13/0643	...	{ Gutter corners }
E04D 13/0645	...	{ Connections between gutter and down pipe }
E04D 13/0646	...	{ made of concrete or stone-like material }
E04D 13/0648	...	{ comprising provisions for heat insulation, e.g. an insulation layer }
E04D 13/068	...	Means for fastening gutter parts together
E04D 13/0685	....	{ in combination with hanging means }
E04D 13/072	...	Hanging means (in combination with means for fastening gutter parts together { E04D 13/0685 })
E04D 13/0722	....	{ extending mainly under the gutter }
E04D 13/0725	....	{ situated above or inside the gutter }
E04D 13/0727	....	{ situated mainly at the rear side of the gutter }
E04D 13/076	..	Devices or arrangements for removing snow, ice or debris from gutters or for preventing accumulation thereof
E04D 13/0762	...	{ De-icing devices or snow melters }
E04D 13/0765	...	{ Cleaning tools }
E04D 13/0767	...	{ Strainers at connection between gutter and down pipe }
E04D 13/08	..	Down pipes; Special clamping means therefor (clamping pipes in general F16B , F16L)
E04D 2013/0806	...	Details of lower end of down pipes, e.g. connection to water disposal system
E04D 2013/0813	....	Water diverters
E04D 2013/082	...	Down pipe branches
E04D 2013/0826	...	Passages of down pipes through walls or floors

- E04D 2013/0833 . . . Elbow pieces
- E04D 2013/084 . . . Means for fixing down pipes to structure
- E04D 2013/0846 . . . Interconnecting down pipe parts
- E04D 2013/0853 . . . Valves for controlling the rain water flow
- E04D 2013/086 . . . Filters
- E04D 2013/0866 . . . Access opening for cleaning; Devices for avoiding cumulation of debris
- E04D 2013/0873 . . . Rain water reservoirs integrated in down pipes
- E04D 2013/088 . . . D-icing devices or snow melters
- E04D 2013/0886 . . . Devices for preventing climbing on down pipes
- E04D 2013/0893 . . . incorporated in building structure

- E04D 13/10 . Snow traps; { Removing snow from roofs; Snow melters }
- E04D 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](#)) }
- E04D 13/106 . . { Snow removing devices (for gutters [E04D 13/076](#)) }

- E04D 13/12 . Devices or arrangements allowing walking on the roof or in the gutter

- E04D 13/14 . Junctions of roof sheathings to chimneys or other parts extending above the roof
- E04D 13/1407 . . { for flat roofs }
- E04D 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](#)) }
- E04D 2013/1422 . . Parapet building elements for retaining the roof flashing
- E04D 13/143 . . with ventilating means { in junctions of roof sheathings to parts extending above the roof }
- E04D 13/147 . . specially adapted for inclined roofs { trays for cavity walls [E04B 1/70](#) }
- E04D 13/1471 . . . { using a hinge mechanism for adaptation to the inclined roof }
- E04D 13/1473 . . . { specially adapted to the cross-section of the parts extending above the roof }
- E04D 13/1475 { wherein the parts extending above the roof have a generally rectangular cross-section }
- E04D 13/1476 { wherein the parts extending above the roof have a generally circular cross-section }
- E04D 13/1478 . . . { Junctions to walls extending above the roof }

- E04D 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](#)) }
- E04D 13/151 . . { Expansion joints for roofs }
- E04D 13/152 . . with ventilating means { in soffits or fascias; (on the eaves of the roof [E04D 13/178](#)) }
- E04D 13/155 . . retaining the roof sheathing
- E04D 13/158 . . covering the overhang at the eave side, e.g. soffits, or the verge of saddle roofs
- E04D 13/1585 . . . { covering the verge of saddle roofs (gable tiles [E04D 1/30](#)) }

- E04D 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 }

- E04D 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](#)) }
- E04D 13/1612 . . . { the roof structure comprising a supporting framework of roof purlins or rafters }
- E04D 13/1618 { with means for fixing the insulating material between the roof covering and the upper surface of the roof purlins or rafters }
- E04D 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](#)) }
- E04D 13/1631 { the means deriving from the nature or the shape of the insulating material itself }
- E04D 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 }
- E04D 13/1643 . . . { the roof structure being formed by load bearing corrugated sheets, e.g. profiled sheet metal roofs }
- E04D 13/165 { Double skin roofs }
- E04D 13/1656 { Closure strips or elements filling the spaces between the corrugated sheets and a supporting wall }
- E04D 13/1662 . . . { Inverted roofs or exteriorly insulated roofs }
- E04D 13/1668 . . . { the insulating material being masses or granules applied in situ }
- E04D 13/1675 { on saddle-roofs or inclined roof surfaces }
- E04D 13/1681 . . . { Insulating of pre-existing roofs with or without ventilating arrangements }
- E04D 13/1687 . . { the insulating material having provisions for roof drainage }
- E04D 13/1693 . . . { the upper surface of the insulating material forming an inclined surface }

- E04D 13/17 . Ventilation of roof coverings not otherwise provided for (ventilation of rooms or spaces [F24F](#))
- E04D 13/172 . . { Roof insulating material with provisions for or being arranged for permitting ventilation of the roof covering }
- E04D 13/174 . . { on the ridge of the roof }
- E04D 13/176 . . . { formed by flexible material suitable to be rolled up }
- E04D 13/178 . . { on the eaves of the roof }

- E04D 15/00 Apparatus or tools for roof working**

- E04D 15/003 . { for removing roof material (for floor coverings [E04G 23/006](#)) }
- E04D 15/006 . { for cleaning the roof (for cleaning gutters [E04D 13/0765](#); for removing snow from roofs [E04D 13/106](#)) }
- E04D 15/02 . for roof coverings comprising tiles, shingles, or like roofing elements (([E04D 15/003](#) takes precedence))
- E04D 15/025 . . { Templates, gauges or spacers for installing roof tiles or roof laths (templates for rafters [E04G 21/1891](#)) }
- E04D 15/04 . for roof coverings comprising slabs, sheets or flexible material
- E04D 2015/042 . . Fixing to the roof supporting structure

E04D 2015/045 . . . by nailing

E04D 2015/047 . . . by screwing

E04D 15/06 . for handling roofing or sealing material in roll form

E04D 15/07 . for handling roofing or sealing material in bulk form