

## E04C

**STRUCTURAL ELEMENTS; BUILDING MATERIALS** (for bridges [E01D](#); specially designed for insulation or other protection [E04B](#); elements used as building aids [E04G](#); for mining [E21](#); for tunnels [E21D](#); structural elements with broader range of application than for building engineering [F16](#), particularly [F16S](#))

### Definition statement

*This place covers:*

Structural elongated elements for buildings, prefabricated or not, as individual structural elements per se, e.g. pillars, columns, beams, girders, trusses;

Two-dimensional prefabricated building elements for the construction of parts of buildings, like sheets, slabs or panels, mainly for walls or partitions;

Apparatus for handling smaller elements or hardenable material for the realization of two-dimensional concrete or stone-like prefabricated elements;

Bricks or block shaped elements, but only if having special adaptations, like e.g. serving for locating conduits, or being transparent, or being built-up from parts of different materials;

Concrete reinforcements, of metal or other materials, e.g. rebars, stirrups, reinforcing grids or cages, reinforcing fibres, connectors and spacers for reinforcements

### References

#### Limiting references

*This place does not cover:*

Compositions of concrete, mortars or like building materials	<a href="#">C04B</a>
Structural elements for bridges	<a href="#">E01D</a>
Building foundations	<a href="#">E02D</a>
Structural elements specially designed for insulation or other protection	<a href="#">E04B</a>
Building construction in general	<a href="#">E04B 1/00</a>
Load-bearing walls made from panels	<a href="#">E04B 1/02</a> - <a href="#">E04B 1/14</a>
Load- and non-load-bearing walls made up of layers of building elements, e.g. brick walls; bricks or block shaped building elements for walls	<a href="#">E04B 2/02</a> - <a href="#">E04B 2/54</a>
Other load-bearing walls	<a href="#">E04B 2/56</a> - <a href="#">E04B 2/709</a> and <a href="#">E04B 2/84</a> - <a href="#">E04B 2/8664</a>
Other non-load-bearing walls; Curtain walls	<a href="#">E04B 2/72</a> - <a href="#">E04B 2/8664</a> ; <a href="#">E04B 2/88</a> - <a href="#">E04B 2/967</a>
Floor structures	<a href="#">E04B 5/00</a>
Roof structures	<a href="#">E04B 7/00</a>
Suspended or false ceilings	<a href="#">E04B 9/00</a>
Roof coverings	<a href="#">E04D</a>
Finishing work on building, e.g. lining, covering, flooring	<a href="#">E04F</a>
Panels for lining or finishing	<a href="#">E04F 13/00</a>

Elements used as building aids, e.g. scaffolding, forms	<a href="#">E04G</a>
Buildings or like structures for particular purposes, e.g. small temporary buildings, waiting shelters, telephone cabinets	<a href="#">E04H</a>
Structural elements for mining	<a href="#">E21</a>
Structural elements for tunnels	<a href="#">E21D</a>
Structural elements with broader range of application than for building engineering	<a href="#">F16</a>

## E04C 1/00

**Building elements of block or other shape for the construction of parts of buildings (of relatively thin form [E04C 2/00](#); structural elongated elements designed for load-supporting [E04C 3/00](#), e.g. columns or pillars [E04C 3/30](#); manufacture or material of building bricks, stones, or the like [B28](#), [C03](#), [C04](#); paving elements [E01C](#); general building constructions [E04B](#), e.g. walls [E04B 2/00](#), floors [E04B 5/00](#), roofs [E04B 7/00](#), ceilings [E04B 9/00](#); {roof coverings [E04D](#); coverings for walls or ceilings [E04F 13/00](#); floorings [E04F 15/00](#);} structural elements specially designed for built-in conduit shafts [E04F 17/00](#); {elements for buildings for particular purposes [E04H 7/00](#)}; special elements for building ovens or furnaces [F24B](#), [F27D](#))**

### Definition statement

*This place covers:*

Bricks or block shaped elements for the construction of parts of buildings, but only if having special adaptations, like e.g. serving for locating conduits, or being made-up of different materials, e.g. stones with insulating inserts, or being made-up of transparent materials, e.g. glass bricks

### References

#### Limiting references

*This place does not cover:*

Building elements of relatively thin form, e.g. panels	<a href="#">E04C 2/00</a> - <a href="#">E04C 2/546</a>
Structural elongated elements designed for load-supporting, e.g. beams, column or pillars	<a href="#">E04C 3/00</a> - <a href="#">E04C 3/46</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Manufacture or material of building bricks, stones, or the like	<a href="#">B28</a> , <a href="#">C03</a> , <a href="#">C04</a>
Shaping clay or other ceramic composition, producing shaped articles of clay composition	<a href="#">B28B</a>
Paving elements	<a href="#">E01C</a>
General building constructions	<a href="#">E04B</a>
Walls	<a href="#">E04B 2/00</a>
Floor structures	<a href="#">E04B 5/00</a>
Roof structures	<a href="#">E04B 7/00</a>

Suspended ceilings	<a href="#">E04B 9/00</a>
Roof coverings	<a href="#">E04D</a>
Coverings for walls or ceilings	<a href="#">E04F 13/00</a>
Floorings	<a href="#">E04F 15/00</a>
Structural elements specially designed for built-in conduit shafts	<a href="#">E04F 17/00</a>
Elements for buildings for particular purposes	<a href="#">E04H 7/00</a>
Special elements for building ovens or furnaces	<a href="#">F24B</a> , <a href="#">F27D</a>

### Special rules of classification

Building elements of block or other shape are classified in [E04C 1/00](#) - [E04C 1/42](#) only if they are characterised by special adaptations, if they are build-up from parts of different materials or if they are made of glass or other translucent material; general building elements of block or brick shape for walls are classified in [E04B 2/00](#); general building elements of block or other shape for floors, e.g. filling elements, are classified in [E04B 5/00](#).

### E04C 1/39

**characterised by special adaptations, e.g. serving for locating conduits, for forming soffits, cornices, or shelves, for fixing wall-plates or door-frames, for claustra**

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Walls having cavities in the building elements	<a href="#">E04B 2/14</a> , <a href="#">E04B 2/42</a>
Special adaptation of floors for incorporating ducts	<a href="#">E04B 5/48</a>
Wall copings	<a href="#">E04D 3/405</a>
Soffits coverings for roof cornices	<a href="#">E04D 13/158</a>

### Glossary of terms

*In this place, the following terms or expressions are used with the meaning indicated:*

Claustra	Open-work wall
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### E04C 1/392

**{for ventilating, heating or cooling}**

#### Definition statement

*This place covers:*

Building elements of block or other shape having openings or adaptations of relatively large section for ventilating, heating or cooling.

## References

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Building elements of block or other shape having openings or adaptations of relatively small section for locating conduits	<a href="#">E04C 1/397</a>
Domestic or space heating systems	<a href="#">F24D</a>
Air conditioning	<a href="#">F24F</a>
Ventilation in general	<a href="#">F24F 7/00</a>

## E04C 1/395

{for claustra, fences, planting walls, e.g. sound-absorbing (pots for vertical horticulture [A01G 9/022](#))}

## References

### Limiting references

This place does not cover:

Pots for vertical horticulture	<a href="#">A01G 9/022</a>
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### Informative references

Attention is drawn to the following places, which may be of interest for search:

Sound barriers	<a href="#">E01F 8/00</a>
Retaining or protecting walls, made up of similar modular elements stacked without mortar	<a href="#">E02D 29/02</a> , <a href="#">E02D 29/025</a>
Fences	<a href="#">E04H 17/00</a>

## E04C 1/397

{serving for locating conduits ([E04C 1/392](#) takes precedence)}

## Definition statement

This place covers:

Building elements of block or other shape having openings or adaptations of relatively small section for locating conduits

## References

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Building elements of block or other shape having openings or adaptations of relatively large section for ventilating, heating or cooling.	<a href="#">E04C 1/392</a>
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**E04C 1/42**

of glass or other transparent material {(panels made of glass bricks [E04C 2/546](#))}

**References****Limiting references**

*This place does not cover:*

Slab-like translucent elements made of glass bricks	<a href="#">E04C 2/546</a>
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**E04C 2/00**

Building elements of relatively thin form for the construction of parts of buildings, e.g. sheet materials, slabs, or panels (materials or manufacture, see the relevant subclasses, e.g. [B27N](#), [D21J](#); made in situ [E04B](#); specially designed for insulation or other protection [E04B 1/62](#); load-carrying floor structures [E04B 5/02](#), [E04B 5/16](#); roofs consisting of self-supporting slabs [E04B 7/20](#); roof or like covering elements [E04D 3/00](#); for lining or finishing [E04F 13/00](#))

**Definition statement**

*This place covers:*

Two-dimensional prefabricated building elements for the construction of parts of buildings, i.e. building elements in which one dimension is small in comparison to the other two, like e.g. sheets, slabs or panels, mainly used for walls or partitions

**References****Limiting references**

*This place does not cover:*

Building elements of relatively thin form made in situ	<a href="#">E04B</a>
Load-carrying floor structures, e.g. load-carrying prefabricated floor slabs	<a href="#">E04B 5/02</a> , <a href="#">E04B 5/16</a>
Roof or like slab shaped covering elements	<a href="#">E04D 3/00</a>

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Manufacture by dry processes of articles, made from particles or fibres of wood	<a href="#">B27N</a>
Shaping clay or other ceramic composition, producing shaped articles of clay composition	<a href="#">B28B</a>
Manufacture of articles from cellulosic fibrous suspension	<a href="#">D21J</a>
Building elements of relatively thin form specially designed for insulation or other protection	<a href="#">E04B 1/62</a>
Roof consisting of self-supporting slabs	<a href="#">E04B 7/20</a>
Slabs or panels for suspended ceilings	<a href="#">E04B 9/04</a>

Building elements for lining or finishing	<a href="#">E04F 13/00</a>
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### Special rules of classification

For the materials or the manufacture, see the relevant subclasses.

Classify in [E04C 2/00](#) - [E04C 2002/3494](#) all additional information

## E04C 2/02

characterised by specified materials (translucent [E04C 2/54](#))

### References

#### Limiting references

*This place does not cover:*

Slab-like translucent elements	<a href="#">E04C 2/54</a>
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## E04C 2/04

of concrete or other stone-like material; of asbestos cement; {of cement and other mineral fibres} ([E04C 2/26](#) takes precedence; material or manufacture [B28](#), [C04](#))

### References

#### Limiting references

*This place does not cover:*

Building sheets, slabs or panels composed of materials covered by two or more of groups <a href="#">E04C 2/04</a> , <a href="#">E04C 2/08</a> , <a href="#">E04C 2/10</a> , or of materials covered by one of these groups with a material not specified in one of these groups	<a href="#">E04C 2/26</a>
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### Special rules of classification

For the material or the manufacture, see [B28](#), [C04](#).

## E04C 2/042

{Apparatus for handling the smaller elements or the hardenable material; bricklaying machines for prefabricated panels (bricklaying machines in general [E04G 21/22](#))}

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Bricklaying machines in general	<a href="#">E04G 21/22</a>
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**E04C 2/043****{of plaster ([E04C 2/049](#) takes precedence)}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Building sheets, slabs or panels made of an insulating material on plaster basis, like foamed plaster	<a href="#">E04C 2/049</a>
Furniture panels with a continuous layer allowing folding	<a href="#">A47B 96/202</a>
Folding plates or sheets by forming folding lines and folding	<a href="#">B29C 53/063</a>
Panels for suspended ceilings	<a href="#">E04B 9/04</a>

**E04C 2/044****{of concrete ([E04C 2/049](#) takes precedence)}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Building sheets, slabs or panels made of an insulating material on concrete basis, like cellular concrete	<a href="#">E04C 2/049</a>
Walls made by projecting concrete to the exterior of an insulating foam panel	<a href="#">E04B 2/847</a>

**E04C 2/06****reinforced****Definition statement***This place covers:*

Building sheets, slabs or panels made of concrete or other stone-like materials and reinforcing elements, e.g. slabs of concrete with reinforcing rods

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Reinforcing elements, e.g. for concrete	<a href="#">E04C 5/00</a>
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**E04C 2/08**

of metal, e.g. sheet metal ([E04C 2/26](#) takes precedence)

**References****Limiting references**

*This place does not cover:*

Building sheets, slabs or panels composed of materials covered by two or more of groups <a href="#">E04C 2/04</a> , <a href="#">E04C 2/08</a> , <a href="#">E04C 2/10</a> , or of materials covered by one of these groups with a material not specified in one of these groups	<a href="#">E04C 2/26</a>
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**E04C 2/10**

of wood, fibres, chips, vegetable stems, or the like; of plastics; of foamed products ({[E04C 2/049](#)}, [E04C 2/26](#) take precedence; {hydraulic cement and mineral fibres [E04C 2/04](#)})

**References****Limiting references**

*This place does not cover:*

Building sheets, slabs or panels made of hydraulic cement and mineral fibres	<a href="#">E04C 2/04</a>
Building sheets, slabs or panels made of foamed concrete or other stone-like products	<a href="#">E04C 2/049</a>
Building sheets, slabs or panels composed of materials covered by two or more of groups <a href="#">E04C 2/04</a> , <a href="#">E04C 2/08</a> , <a href="#">E04C 2/10</a> , or of materials covered by one of these groups with a material not specified in one of these groups	<a href="#">E04C 2/26</a>

**E04C 2/12**

of solid wood

**Definition statement**

*This place covers:*

Building sheets, slabs or panels substantially made of solid wood, with or without reinforcements

**References****Limiting references**

*This place does not cover:*

Building sheets, slabs or panels made of fibres, chips, vegetable stems or the like	<a href="#">E04C 2/16</a>
Building sheets, slabs or panels laminated and composed of materials covered by two or more of groups <a href="#">E04C 2/12</a> , <a href="#">E04C 2/16</a> , <a href="#">E04C 2/20</a>	<a href="#">E04C 2/24</a>



**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Building sheets, slabs or panels laminated and composed of materials covered by two or more of groups <a href="#">E04C 2/12</a> , <a href="#">E04C 2/16</a> , <a href="#">E04C 2/20</a>	<a href="#">E04C 2/24</a>
Wood working	<a href="#">B27</a>

**E04C 2/14**

**reinforced**

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Reinforced wooden beams	<a href="#">E04C 3/18</a>
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**E04C 2/16**

**of fibres, chips, vegetable stems, or the like**

**Definition statement**

*This place covers:*

Building sheets, slabs or panels composed of organic or inorganic fibres, organic or inorganic chips, vegetable stems, or the like, with or without additional glue or adhesive

**References****Limiting references**

*This place does not cover:*

Building sheets, slabs or panels made of hydraulic cement and mineral fibres	<a href="#">E04C 2/04</a>
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**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Building sheets, slabs or panels laminated and composed of materials covered by two or more of groups <a href="#">E04C 2/12</a> , <a href="#">E04C 2/16</a> , <a href="#">E04C 2/20</a>	<a href="#">E04C 2/24</a>
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**E04C 2/18**

**with binding wires, reinforcing bars, or the like**

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Reinforcing elements, e.g. for concrete	<a href="#">E04C 5/00</a>
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**E04C 2/20****of plastics****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Building sheets, slabs or panels laminated and composed of materials covered by two or more of groups <a href="#">E04C 2/12</a> , <a href="#">E04C 2/16</a> , <a href="#">E04C 2/20</a>	<a href="#">E04C 2/24</a>
Shaping of plastics	<a href="#">B29C</a>

**E04C 2/22****reinforced {([E04C 2/205](#) takes precedence)}****Definition statement***This place covers:*

Building sheets, slabs or panels made of plastics and comprising reinforcing elements such as fibres, rods

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Building sheets, slabs or panels made of foamed plastics	<a href="#">E04C 2/205</a>
Reinforcing elements, e.g. for concrete	<a href="#">E04C 5/00</a>

**E04C 2/24**

**laminated and composed of materials covered by two or more of groups**  
[E04C 2/12](#), [E04C 2/16](#), [E04C 2/20](#)

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Layered products	<a href="#">B32B</a>
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**E04C 2/26**

composed of materials covered by two or more of groups [E04C 2/04](#), [E04C 2/08](#), [E04C 2/10](#) or of materials covered by one of these groups with a material not specified in one of the groups {(of cement and mineral fibres [E04C 2/04](#))}

**Definition statement**

*This place covers:*

Building sheets, slabs or panels, laminated or not, and composed of materials covered by two or more of groups [E04C 2/04](#), [E04C 2/08](#), [E04C 2/10](#) or of materials covered by one of these groups with a material not specified in one of the groups.

**References****Limiting references**

*This place does not cover:*

Building sheets, slabs or panels made of hydraulic cement and mineral fibres	<a href="#">E04C 2/04</a>
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**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Layered products	<a href="#">B32B</a>
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**E04C 2/288**

composed of insulating material and concrete, stone or stone-like material

**Special rules of classification**

Sandwich panels composed of layers of insulating material alternated with layers of concrete are classified in [E04C 2/288](#).

**E04C 2/296**

composed of insulating material and non-metallic or unspecified sheet-material ([E04C 2/288](#) takes precedence)

**References****Limiting references**

*This place does not cover:*

Building sheets, slabs or panels composed of insulating material and concrete, stone or stone-like material	<a href="#">E04C 2/288</a>
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**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Fibrous panels characterised by the orientation of the fibres	<a href="#">E04B 2001/7683</a>
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**E04C 2/30**

characterised by the shape or structure (translucent [E04C 2/54](#))

**References****Limiting references**

*This place does not cover:*

Slab-like translucent elements	<a href="#">E04C 2/54</a>
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**E04C 2/32**

formed of corrugated or otherwise indented sheet-like material; composed of such layers with or without layers of flat sheet-like material

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Corrugated metal floor slabs for floors	<a href="#">E04B 5/40</a>
Roofing slabs having special cross-sections	<a href="#">E04D 3/24</a> - <a href="#">E04D 3/34</a>
Roofing slabs comprising two or more layers, with or without corrugations	<a href="#">E04D 3/35</a>

**Special rules of classification**

Corrugated sheet-like material having one as well as a plurality of layers is classified in [E04C 2/32](#)

**E04C 2/322**

{with parallel corrugations}

**Definition statement**

*This place covers:*

Sheet-like material with parallel corrugations, e.g. with parallel undulated corrugations

**E04C 2/324**

{with incisions or reliefs in the surface ([E04C 2/326](#) takes precedence)}

**References****Limiting references**

*This place does not cover:*

Building elements of relatively thin form with corrugations, incisions or reliefs in more than one direction of the element	<a href="#">E04C 2/326</a>
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**E04C 2/326**

**{with corrugations, incisions or reliefs in more than one direction of the element}**

**Definition statement**

*This place covers:*

Sheet-like material with corrugations, incisions or reliefs in more than one direction of the element, e.g. egg-crate reliefs

**E04C 2/34**

**composed of two or more spaced sheet-like parts ([E04C 2/32](#) takes precedence; spacers for cavity walls [E04B 2/44](#))**

**Definition statement**

*This place covers:*

Sheet-like elements composed of two or more spaced sheet-like parts, e.g. sandwich panels

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Panels composed of insulating material and concrete	<a href="#">E04C 2/288</a>
Building elements of relatively thin form formed of corrugated or otherwise indented sheet-material	<a href="#">E04C 2/32</a>
Spacers for cavity walls	<a href="#">E04B 2/44</a>
Roofing slabs comprising two or more layers	<a href="#">E04D 3/35</a>

**E04C 2/3405**

**{spaced apart by profiled spacer sheets}**

**Definition statement**

*This place covers:*

Sheet-like elements composed of two or more spaced sheet-like parts, spaced apart by profiled spacer sheets, like e.g. corrugated cardboard

**E04C 2/36**

**spaced apart by transversely-placed strip material, e.g. honeycomb panels (honeycomb or other core members for layered products [B32B](#))**

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Honeycomb or other core members for layered products	<a href="#">B32B</a>
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## E04C 2/38

with attached ribs, flanges, or the like, e.g. framed panels (concerned with attaching to other panels or elements to form a structure, see the places for the relevant structure, e.g. [E04B 2/00](#))

### Definition statement

*This place covers:*

Building sheets, slabs or panels having attached ribs, flanges, or the like, e.g. framed panels and panels with upstanding edges around their borders

### Special rules of classification

Details of connection to other panels or elements to form a structure are classified in the groups of the relevant structure, e.g. [E04B 2/00](#) for wall structures

### Glossary of terms

*In this place, the following terms or expressions are used with the meaning indicated:*

Framed panel	Panel having a frame around its borders
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## E04C 2/40

composed of a number of smaller components rigidly or movably connected together, e.g. interlocking, hingedly connected {of particular shape, e.g. not rectangular of variable shape or size, e.g. flexible or telescopic panels ([E04C 2/041](#) takes precedence)}

### Definition statement

*This place covers:*

Building sheets, slabs or panels, composed of a number of smaller components rigidly or movably connected together, e.g. foldable garage doors

### References

#### Limiting references

*This place does not cover:*

Building sheets, slabs or panels, composed of a number of smaller components rigidly connected together, of concrete or other stone-like material, of asbestos cement, of cement and other mineral fibres	<a href="#">E04C 2/041</a>
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## E04C 2/42

**Gratings; Grid-like panels (reinforcing elements [E04C 5/00](#); built-in gratings [E04F 19/10](#); gratings in general [F16S 3/00](#))**

### References

#### Limiting references

*This place does not cover:*

Reinforcing grids or mats of metal	<a href="#">E04C 5/04</a>
Non-metallic reinforcing mats	<a href="#">E04C 5/07</a>
Grids for ceilings	<a href="#">E04B 9/345</a>
Built-in gratings	<a href="#">E04F 19/10</a>
Gratings or grilles made from a sheet	<a href="#">F16S 1/00</a>
Gratings in general	<a href="#">F16S 3/00</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Grids, gratings for stable floors	<a href="#">A01K 1/0151</a>
Making metal grids	<a href="#">B21D 47/005</a>
Circumferential gutters for swimming-pools	<a href="#">E04H 4/1227</a>

## E04C 2/52

**with special adaptations for auxiliary purposes, e.g. serving for locating conduits ([E04C 2/54](#) takes precedence; block-shaped elements therefor [E04C 1/39](#); floor structures incorporating ducts [E04B 5/48](#))**

### References

#### Limiting references

*This place does not cover:*

Slab-like translucent elements	<a href="#">E04C 2/54</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Building elements of block shape having adaptations serving for locating conduits	<a href="#">E04C 1/39</a>
Floor structures incorporating ducts	<a href="#">E04B 5/48</a>

**E04C 2/523**

{for ventilating}

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Ventilation in general	<a href="#">F24F 7/00</a>
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**E04C 2/525**{for heating or cooling (solar heat collectors [F24S 10/00](#); heat storage [F28D 20/00](#))}**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Solar heat collectors	<a href="#">F24S</a>
Heat storage	<a href="#">F28D 20/00</a>

**E04C 2/54**Slab-like translucent elements (floors for transmitting light [E04B 5/46](#); translucent or open-work ceilings [E04B 9/32](#), [E04B 9/34](#); translucent roof coverings [E04D 3/06](#), [E04D 3/28](#))**Definition statement***This place covers:*

Translucent or transparent slab-like elements

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Floors for transmitting light	<a href="#">E04B 5/46</a>
Translucent ceilings, open work ceilings	<a href="#">E04B 9/32</a> , <a href="#">E04B 9/34</a>
Translucent roof coverings	<a href="#">E04D 3/06</a> , <a href="#">E04D 3/28</a>



**E04C 2/543****{Hollow multi-walled panels with integrated webs}****Definition statement**

*This place covers:*

Translucent hollow slab-like elements having a cross-section which is internally subdivided by walls, e.g. a translucent polyurethane roofing slab which cross section is internally subdivided by, in use, horizontal and vertical walls

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Greenhouse of flexible material with double or multiple walls	<a href="#">A01G 9/1469</a>
Extrusion dies for extruding multi-channel profiles	<a href="#">B29C 48/345</a>
Translucent roof covering made with elements having special cross-sections	<a href="#">E04D 3/28</a>

**E04C 3/00****Structural elongated elements designed for load-supporting (as building aids [E04G](#))****Definition statement**

*This place covers:*

Structural elongated elements designed for permanent load-supporting in buildings, e.g. building beams and columns

**References****Limiting references**

*This place does not cover:*

Structural elongated elements for bridges	<a href="#">E01D</a>
Piles for foundations	<a href="#">E02D 5/00</a>
Non-load supporting elongated members for partition walls	<a href="#">E04B 2/74</a>
Non-load supporting elongated elements for suspended ceilings	<a href="#">E04B 9/06</a>
Structural elongated elements designed as building aids	<a href="#">E04G</a>
Structural elongated elements for masts, towers, poles	<a href="#">E04H 12/00</a>
Structural elongated elements for tents	<a href="#">E04H 15/00</a>
Structural elongated elements for mining, tunnels	<a href="#">E21C</a> , <a href="#">E21D</a>

**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Structural elongated elements for railways or railway vehicles, for land vehicles, for ships, for aircrafts	<a href="#">B61</a> , <a href="#">B62</a> , <a href="#">B63</a> , <a href="#">B64</a>
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Structural elongated elements for hoisting devices, e.g. cranes	<a href="#">B66</a>
Structures comprising elongated load-supporting parts; three-dimensional framework structures	<a href="#">E04B 1/18</a> ; <a href="#">E04B 1/19</a>
Connections of bar shaped building elements; for metal bars; for wooden bars	<a href="#">E04B 1/58</a> ; <a href="#">E04B 1/2403</a> ; <a href="#">E04B 1/2604</a>

### Special rules of classification

Classify in [E04C 3/00](#) - [E04C 2003/0495](#) all additional information

### E04C 3/005

**{Girders or columns that are rollable, collapsible or otherwise adjustable in length or height (girders as supporting members for forms [E04G 11/54](#))}**

### References

#### Informative references

Attention is drawn to the following places, which may be of interest for search:

Structures characterised by movable, separable, or collapsible parts	<a href="#">E04B 1/343</a>
Locating rails for walls, with adjustable curvature	<a href="#">E04B 2002/7481</a>
Extensible girders as supporting members for forms; telescopic	<a href="#">E04G 11/54</a> ; <a href="#">E04G 11/56</a>
Telescopic shores or struts	<a href="#">E04G 25/04</a>
Telescopic grandstands; foldable, retractable tribunes	<a href="#">E04H 3/123</a> ; <a href="#">E04H 3/126</a>
Telescopic poles	<a href="#">E04H 12/182</a>
Inflatable tubular frameworks for tents	<a href="#">E04H 2015/201</a>
Collapsible frames for tents; telescopic	<a href="#">E04H 15/44</a> ; <a href="#">E04H 15/46</a>
Extensible carriers for electric cables	<a href="#">H02G 11/006</a>

### Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Girders or columns that are rollable	Girders or columns that are coilable or windable
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### E04C 3/02

**Joists; Girders, trusses, or trusslike structures, e.g. prefabricated; Lintels; Transoms; {Braces} ([E04C 3/38](#) takes precedence; for structures characterised by movable, separable, or collapsible parts [E04B 1/343](#); {braced purlins [E04B 7/024](#)})**

### References

#### Limiting references

This place does not cover:

Arched girders or portal frames	<a href="#">E04C 3/38</a>
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Roof structures having braced purlins	<a href="#">E04B 7/024</a>
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### Informative references

Attention is drawn to the following places, which may be of interest for search:

Cross-sectional aspects of beams, girders and joists made of metal	<a href="#">E04C 2003/0404</a> , <a href="#">E04C 2003/0486</a>
Reinforcing elements consisting of light-weight girders as reinforcing elements, e.g. light-weight girders for floors construction	<a href="#">E04C 5/065</a>
Girders for cranes	<a href="#">B66C 6/00</a>
Structures characterised by movable, separable, or collapsible parts	<a href="#">E04B 1/343</a>
Connections of bar shaped building elements	<a href="#">E04B 1/58</a>
Constructional features of the supporting construction of suspended-ceilings, e.g. inverted T-bars	<a href="#">E04B 9/06</a>
Girders for shutterings	<a href="#">E04G 11/50</a>

### Special rules of classification

Structures characterised by movable, separable, or collapsible parts should be classified in [E04B 1/343](#); when these structures have elongated structural elements presenting inventive aspects they can also be classified in [E04C 3/02](#) or its sub-groups.

### Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Joist	Horizontal supporting member that runs from wall to wall, wall to beam, or beam to beam to support a ceiling, a roof or a floor.
Girder	Support beam used in construction, e.g. an I-shaped girder, a box-shaped girder, a truss- or lattice-girder.
Truss	Elongated structure comprising one or more triangular units constructed with straight members whose ends are connected at joints referred as nodes.
Lintel	Load-bearing elongated element located in use over door or window openings.
Transom	A bar of wood or stone across the top of a door or window opening
Brace	A structural elongated element serving as connecting/reinforcing element between structural elements, e.g. braces between wooden joists in a floor structure

## E04C 3/04

of metal ([E04C 3/29](#) takes precedence; as reinforcing elements [E04C 5/06](#); manufacture [B21](#))

### References

#### Limiting references

*This place does not cover:*

Joists, girders or trusses built-up from parts of different material	<a href="#">E04C 3/29</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Cross-sectional aspects of beams, girders and joists made of metal	<a href="#">E04C 2003/0404</a>
Metallic girder or trusses used as reinforcing elements	<a href="#">E04C 5/06</a>
Manufacture of metallic elongated elements; Rolling of metal	<a href="#">B21B</a>
Structures of metal for towers, masts or poles	<a href="#">E04H 12/08</a>

### Special rules of classification

Metallic girders or trusses used as reinforcing elements should be classified in [E04C 3/04](#) and its sub-groups only if they have some inventive aspects and can be used as load-supporting elements per se.

## E04C 3/06

with substantially solid, i.e. unapertured, web ([E04C 3/10](#), [E04C 3/11](#) take precedence {honeycomb girders [E04C 3/083](#)})

### References

#### Limiting references

*This place does not cover:*

Honeycomb metallic beams, i.e. castellated beams; metallic beams with apertured solid web	<a href="#">E04C 3/083</a>
Metallic joists, girders and trusses with non-parallel upper and lower edges	<a href="#">E04C 3/11</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Cross-sectional aspects of beams, girders and joists made of metal	<a href="#">E04C 2003/0404</a>
Prestressed metallic joists, girders and trusses	<a href="#">E04C 3/10</a>

### Special rules of classification

Metallic girders having a web constituted by a series of unapertured webs having a spacing between them, i.e. like a rake, are classified in [E04C 3/06](#) and in [E04C 3/083](#).

## Glossary of terms

*In this place, the following terms or expressions are used with the meaning indicated:*

web	The "vertical" element of the beam connected to the flange(s); the beam can either be an I-, T-,C- or a box beam; in case of an H or U-beam the web is considered to be the "horizontal" element (in analogy with I- and C-beams.)
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## E04C 3/07

**at least partly of bent or otherwise deformed strip- or sheet-like material**

### Definition statement

*This place covers:*

Metallic girders or beams having a non-apertured web and made at least partially of deformed strip- or sheet-like material, e.g. by cold rolling

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Lintels	<a href="#">E04C 2003/023</a>
Braces	<a href="#">E04C 2003/026</a>
Cross-sectional aspects of beams, girders and joists made of metal	<a href="#">E04C 2003/0404</a>
Metallic girders or beams made of bent or otherwise deformed strip- or sheet-like material, and having an apertured web	<a href="#">E04C 3/09</a>
Bending of sheet metal	<a href="#">B21D 5/00</a>
Wall partitions with framework or posts of metal	<a href="#">E04B 2/76</a>
Supporting beams for a suspended ceiling having a folded cross-section	<a href="#">E04B 9/065</a>

## E04C 3/08

**with apertured web, e.g. with a web consisting of bar-like components;  
Honeycomb girders ([E04C 3/10](#), [E04C 3/11](#) take precedence)**

### References

#### Limiting references

*This place does not cover:*

Metallic joists, girders and trusses with non-parallel upper and lower edges	<a href="#">E04C 3/11</a>
Metallic arched girders or trusses, portal frames	<a href="#">E04C 3/40</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Metallic truss-like structures composed of separate truss elements	<a href="#">E04C 2003/0486</a>
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Prestressed metallic joists, girders and trusses	<a href="#">E04C 3/10</a>
Reinforcing elements consisting of metallic light-weight girders, e.g. light-weight girders for floor construction	<a href="#">E04C 5/065</a>
Truss-type bridges	<a href="#">E01D 6/00</a>
Three-dimensional frameworks	<a href="#">E04B 1/19</a>
Connections specially adapted for structures comprising elongated supporting parts of metal	<a href="#">E04B 1/2403</a>
Metallic truss-like structures for masts, towers, poles	<a href="#">E04H 12/10</a>

## E04C 3/083

### {Honeycomb girders; Girders with apertured solid web}

#### Definition statement

*This place covers:*

Honeycomb metallic girders, i.e. castellated metallic girders; Metallic girders with apertured solid web, i.e. metallic girders in which apertures have been made in the solid web.

#### References

##### Limiting references

*This place does not cover:*

Metallic girders or beams made of bent or otherwise deformed strip- or sheet-like material, and having an apertured web	<a href="#">E04C 3/09</a>
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##### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Making rigid structural elements or units, e.g. honeycomb structures	<a href="#">B21D 47/00</a>
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#### Special rules of classification

Metallic girders having a web constituted by a series of unapertured webs having a spacing between them, i.e. like a rake, are classified in [E04C 3/06](#) and in [E04C 3/083](#).

#### Synonyms and Keywords

Honeycomb girder	Castellated girder
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## E04C 3/09

### at least partly of bent or otherwise deformed strip- or sheet-like material

#### Definition statement

*This place covers:*

Metallic girders or beams made of at least partially deformed strip- or sheet-like material, and having an apertured web, e.g. made by an expanded metal sheet or made by cutting holes in the solid web.

## References

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Metallic girders or beams made of at least partially deformed strip- or sheet-like material, and having a substantially unapertured web	<a href="#">E04C 3/07</a>
Bending of sheet metal	<a href="#">B21D 5/00</a>
Wall partitions with framework or posts of metal	<a href="#">E04B 2/76</a>
Supporting beams for a suspended ceiling having a folded cross-section	<a href="#">E04B 9/065</a>

## Special rules of classification

Metallic trusses made of bar-like elements consisting of bent or deformed sheet material, the bar-like elements per se having an unapertured web, should be classified in [E04C 3/08](#) and in [E04C 3/07](#), not in [E04C 3/09](#).

## E04C 3/10

### prestressed

## References

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Members specially adapted to be used in prestressed constructions	<a href="#">E04C 5/08</a>
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## E04C 3/11

with non-parallel upper and lower edges, e.g. roof trusses (arched girders, portal frames [E04C 3/38](#))

## References

### Limiting references

This place does not cover:

Metallic arched girders, portal frames	<a href="#">E04C 3/40</a>
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### Informative references

Attention is drawn to the following places, which may be of interest for search:

Connections specially adapted for structures comprising elongated supporting parts of metal	<a href="#">E04B 1/2403</a>
Roofs consisting of a plurality of parallel similar trusses	<a href="#">E04B 7/02</a>

**E04C 3/12**

of wood, e.g. with reinforcements, with tensioning members ([E04C 3/292](#) takes precedence)

**References****Limiting references**

*This place does not cover:*

Joists, girders or trusses made of wood and metal	<a href="#">E04C 3/292</a>
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**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Wood working	<a href="#">B27</a>
Wall partitions with framework or posts of wood	<a href="#">E04B 2/80</a>

**E04C 3/14**

with substantially solid, i.e. unapertured, web ({[E04C 3/127](#),} [E04C 3/17](#), [E04C 3/18](#) take precedence)

**References****Limiting references**

*This place does not cover:*

Joists, girders or trusses with non-parallel upper and lower edges, e.g. roof trusses	<a href="#">E04C 3/17</a>
Joists, girders or trusses made of wood with metal or other reinforcements or tensioning members	<a href="#">E04C 3/18</a>

**Special rules of classification**

Wooden girders having a web constituted by a series of unapertured webs having a spacing between them, i.e. like a rake, are classified in [E04C 3/14](#) and in [E04C 3/16](#).

**E04C 3/16**

with apertured web, e.g. trusses ([E04C 3/17](#), [E04C 3/18](#) take precedence)

**References****Limiting references**

*This place does not cover:*

Joists, girders, or trusses with non-parallel upper and lower edges, e.g. roof trusses	<a href="#">E04C 3/17</a>
Wooden arched girders, portal frames	<a href="#">E04C 3/42</a>



**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Joists, girders or trusses made of wood with metal or other reinforcements or tensioning members	<a href="#">E04C 3/18</a>
Three-dimensional framework structures	<a href="#">E04B 1/19</a>
Connections specially adapted for structures comprising elongated supporting parts of wood	<a href="#">E04B 1/2604</a>
Wooden truss-like structures for masts, towers and poles	<a href="#">E04H 12/06</a>

**Special rules of classification**

Wooden girders having a web constituted by a series of unapertured webs having a spacing between them, i.e. like a rake, are classified in [E04C 3/14](#) and in [E04C 3/16](#).

**E04C 3/17**

**with non-parallel upper and lower edges, e.g. roof trusses**

**References****Limiting references**

This place does not cover:

Wooden arched girders, portal frames	<a href="#">E04C 3/42</a>
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**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Wood working	<a href="#">B27</a>
Connections specially adapted for structures comprising elongated supporting parts of wood	<a href="#">E04B 1/2604</a>
Roof consisting of a plurality of parallel similar trusses	<a href="#">E04B 7/022</a>

**E04C 3/18**

**with metal {or other} reinforcements or tensioning members**

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Reinforced panels of solid wood	<a href="#">E04C 2/14</a>
Joists, girders or trusses made of wood and metal	<a href="#">E04C 3/292</a>
Members specially adapted to be used in prestressed constructions	<a href="#">E04C 5/08</a>

**E04C 3/185****{Synthetic reinforcements}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Reinforcing elements of material other than metal	<a href="#">E04C 5/07</a>
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**E04C 3/20****of concrete or other stone-like material, e.g. with reinforcements or tensioning members (reinforcing elements [E04C 5/00](#))****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Joists, girders or trusses built-up from parts of steel and parts of concrete	<a href="#">E04C 3/293</a>
Reinforcing elements	<a href="#">E04C 5/00</a>

**E04C 3/205****{with apertured web, e.g. frameworks, trusses ([E04C 3/26](#) takes precedence)}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Prestressed joints, girders or trusses made of concrete or other stone-like material	<a href="#">E04C 3/26</a>
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**E04C 3/22****built-up by elements jointed in line****Definition statement***This place covers:*

Concrete beams built-up by elements jointed in-line, e.g. made up of stacked elements

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Prestressed joints, girders or trusses made of concrete or other stone-like material	<a href="#">E04C 3/26</a>
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**E04C 3/26**

**prestressed** ([E04C 3/22](#), [E04C 3/29](#) take precedence; prestressing members [E04C 5/08](#))

**References****Limiting references**

*This place does not cover:*

Joists, girders or trusses made of concrete or other stone-like material, and built-up by elements jointed in line	<a href="#">E04C 3/22</a>
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**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Joists, girders or trusses built-up from parts of steel and parts of concrete	<a href="#">E04C 3/293</a>
Members specially adapted to be used in prestressed constructions	<a href="#">E04C 5/08</a>

**E04C 3/28**

**of materials not covered by groups [E04C 3/04](#) - [E04C 3/20](#)**

**Definition statement**

*This place covers:*

Joists, girders or trusses made of specified materials other than metal, wood, concrete or stone-like materials, e.g. joists made of glass or plastics

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Joists, girders or trusses built-up from parts of different materials, e.g. laminated from parts of different materials	<a href="#">E04C 3/29</a>
Producing beams of plastics	<a href="#">B29D 99/0003</a>

**E04C 3/29**

**built-up from parts of different material, {i.e. composite structures}**

**Definition statement**

*This place covers:*

Joists, girders or trusses built-up from parts of specified different materials, e.g. built-up from laminated parts of different materials, or from assembled parts of different materials

## References

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Shaping composites	<a href="#">B29C 70/00</a>
Producing beams of plastics	<a href="#">B29D 99/0003</a>
Layered products	<a href="#">B32B</a>
Superstructures of vehicles characterised by the materials	<a href="#">B62D 29/00</a>

## Special rules of classification

Wooden or concrete beams having reinforcements should primarily be classified in [E04C 3/18](#), [E04C 3/185](#) respectively [E04C 3/20](#)-[E04C 3/26](#); when the reinforcements represent a substantial part of the cross-section of the beam, or are themselves constituting a beam, the composite wooden or concrete beams with these reinforcing elements can also be classified in [E04C 3/29](#)

## Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Composite structure	Composite structure refers to the structure of the assembly of the different parts, not to the material
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## E04C 3/292

the materials being wood and metal

## References

### Limiting references

This place does not cover:

Wooden joists, girders or trusses with metal reinforcements or tensioning members	<a href="#">E04C 3/18</a>
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## E04C 3/293

the materials being steel and concrete (concrete with internal reinforcements or tensioning members [E04C 3/20](#))

## References

### Limiting references

This place does not cover:

Joists, girders or trusses made of concrete with internal reinforcements or tensioning members	<a href="#">E04C 3/20</a>
Metallic beams forming part of a floor structure	<a href="#">E04B 5/29</a>

## E04C 3/294

of concrete combined with a girder-like structure extending laterally outside the element (light weight girders used as reinforcement [E04C 5/065](#); as part of a floor structure [E04B 5/23](#))

### Definition statement

*This place covers:*

Girders or trusses built-up from a concrete element and a steel girder-like structure extending laterally outside the concrete element

### References

#### Limiting references

*This place does not cover:*

Light weight girders with concrete precast parts, used as reinforcement	<a href="#">E04C 5/065</a>
Metallic beams forming part of a floor structure, and extending below the floor	<a href="#">E04B 5/29</a>

## E04C 3/30

Columns; Pillars; Struts (not designed for end loading [E04C 3/02](#); posts, masts, as independent structures [E04H 12/00](#))

### References

#### Limiting references

*This place does not cover:*

Structural elongated elements not designed for end loading	<a href="#">E04C 3/02</a> - <a href="#">E04C 3/294</a>
Elongated supporting members for partition walls	<a href="#">E04B 2/74</a>
Structural elongated elements designed as building aids	<a href="#">E04G</a>
Posts, masts as independent structures	<a href="#">E04H 12/00</a>
Structural elongated elements for tents	<a href="#">E04H 15/00</a>
Poles for tents	<a href="#">E04H 15/60</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Coverings or linings for columns	<a href="#">E04F 13/00</a>
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**E04C 3/32****of metal ([E04C 3/36](#) takes precedence)****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Girders made of metal	<a href="#">E04C 3/04</a> - <a href="#">E04C 3/10</a>
Cross-sectional aspects of beams, girders and joists made of metal	<a href="#">E04C 2003/0404</a>

**Special rules of classification**

Always classify in [E04C 3/32](#) columns or pillars in which at least a bearing part of the column or pillar is made of metal, with the exception of concrete rebars

**E04C 3/34**

**of concrete other stone-like material, with or without permanent form elements, with or without internal or external reinforcement, e.g. metal coverings**  
**([E04C 3/36](#) takes precedence)**

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Closed reinforcement cages composed of one single bent reinforcement mat	<a href="#">E04C 5/0613</a>
Closed reinforcement cages with spiral- or coil-shaped stirrup rod	<a href="#">E04C 5/0618</a>

**Special rules of classification**

Always classify in [E04C 3/34](#) columns or pillars in which at least a bearing part of the column or pillar is made of concrete or stone-like material

**E04C 3/36**

**of materials not covered by groups [E04C 3/32](#) or [E04C 3/34](#); of a combination of two or more materials**

**Definition statement***This place covers:*

Columns, pillars or struts made of specified materials other than metal or concrete or stone-like materials, e.g. wood, glass, plastics

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Joists, girders or trusses made of materials other than metal, wood. concrete or stone-like materials, e.g. joists made of glass or plastics	<a href="#">E04C 3/28</a>
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Joists, girders or trusses built-up from parts of different materials, e.g. laminated from parts of different materials	<a href="#">E04C 3/29</a>
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## E04C 3/38

Arched girders or portal frames (straight girders able to be bent [E04C 3/02](#); inflatable [E04H 15/20](#))

### References

#### Limiting references

*This place does not cover:*

Straight girders able to be bent	<a href="#">E04C 3/02</a>
Inflatable girders or portal frames	<a href="#">E04H 15/20</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Gantries or semi-gantries, a.k.a. road sign holders	<a href="#">E01F 9/696</a>
Arched structures	<a href="#">E04B 1/32</a>
Vaulted roofs	<a href="#">E04B 7/08</a>
Arched-type supports for tents	<a href="#">E04H 15/36</a>

## E04C 3/40

of metal ([E04C 3/46](#) takes precedence)

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Metallic girders	<a href="#">E04C 3/04</a>
Cross-sectional aspects of beams, girders and joists made of metal	<a href="#">E04C 2003/0404</a>
Metallic trusses	<a href="#">E04C 3/08</a> ; <a href="#">E04C 3/11</a>
Mechanical metal-working	<a href="#">B21</a>
Connections specially adapted for structures comprising elongated supporting parts of metal	<a href="#">E04B 1/2403</a>

### Special rules of classification

Always classify in [E04C 3/40](#) if a bearing part of the arched girder or portal frame is made of metal

**E04C 3/42**

of wood, e.g. units for rafter roofs ([E04C 3/46](#) takes precedence)

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Wooden girders	<a href="#">E04C 3/12</a>
Wooden trusses	<a href="#">E04C 3/16</a> ; <a href="#">E04C 3/17</a>
Working of wood	<a href="#">B27</a>
Connections specially adapted for structures comprising elongated supporting parts of wood	<a href="#">E04B 1/2604</a>

**Special rules of classification**

Always classify in [E04C 3/42](#) if a bearing part of the arched girder or portal frame is made of wood

**E04C 3/44**

of concrete or other stone-like material, e.g. with reinforcements or tensioning members ([E04C 3/46](#) takes precedence)

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Reinforcing elements	<a href="#">E04C 5/00</a>
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**Special rules of classification**

Always classify in [E04C 3/44](#) if a bearing part of the arched girder or portal frame is made of concrete or other stone-like material

**E04C 3/46**

of materials not covered by groups [E04C 3/40](#) - [E04C 3/44](#); of a combination of two or more materials

**Definition statement**

*This place covers:*

Arched girders or portal frames made of specified materials other than metal, wood, concrete or stone-like material, e.g. of glass, plastics

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Joists, girders or trusses made of materials other than metal, wood, concrete or stone-like materials, e.g. joists made of glass or plastics	<a href="#">E04C 3/28</a>
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Joists, girders or trusses built-up from parts of different materials, e.g. laminated from parts of different materials	<a href="#">E04C 3/29</a>
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## E04C 5/00

Reinforcing elements, e.g. for concrete; Auxiliary elements therefor ({methods or devices for making reinforcing materials [B21D](#);} material composition {[C04B](#),} [C21](#), [C22](#))

### Definition statement

*This place covers:*

Reinforcing elements, metallic and non-metallic, in particular for concrete;

Auxiliary elements for reinforcements, e.g. connectors, spacers;

Arrangements of reinforcing elements, e.g. stirrup baskets

### References

#### Limiting references

*This place does not cover:*

Methods or devices for making metallic reinforcing materials	<a href="#">B21D</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Material composition	<a href="#">C04B</a> , <a href="#">C21</a> , <a href="#">C22</a>
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## E04C 5/01

Reinforcing elements of metal, e.g. with non-structural coatings {([E04C 5/08](#) takes precedence)}

### References

#### Limiting references

*This place does not cover:*

Members specially adapted to be used in prestressed constructions	<a href="#">E04C 5/08</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Mechanical metal-working	<a href="#">B21</a>
Working or processing of metallic wire	<a href="#">B21F</a>

## E04C 5/012

**{Discrete reinforcing elements, e.g. fibres}**

### Definition statement

*This place covers:*

Discrete reinforcing elements of metal, i.e. suitable to be mixed with the concrete before pouring, e.g. metal fibres

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Filler material of fibre shape for concrete	<a href="#">C04B 20/0048</a>
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### Special rules of classification

Discrete reinforcing elements of metal with a well-defined shape other than granular are classified in [E04C 5/012](#) ; discrete elements of metal of granular shape or the shape of which is not defined are considered filler elements and are only classified in [C04B](#)

## E04C 5/015

**{Anti-corrosion coatings or treating compositions, e.g. containing waterglass or based on another metal (coating of discrete reinforcing elements [C04B 20/10](#))}**

### Definition statement

*This place covers:*

Reinforcing elements of metal including anti-corrosion coatings or treating compositions or in-situ anti-corrosion treatments, e.g. cathodic protection

### References

#### Limiting references

*This place does not cover:*

Coating of discrete metallic reinforcing elements, e.g. coating of metallic fibres	<a href="#">C04B 20/10</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Inhibiting corrosion of metallic material by applying inhibitors to the surface in danger	<a href="#">C23F 11/00</a>
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**E04C 5/017****{Anti-corrosion coatings or treating compositions containing cement}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Mortars containing hydraulic cement	<a href="#">C04B 28/02</a>
Coating compositions based on cement	<a href="#">C09D 1/06</a>

**E04C 5/02****of low bending resistance, i.e. of essentially one-dimensional [1D] or two-dimensional [2D] extent****References****Limiting references***This place does not cover:*

Anchoring devices specially adapted for balconies	<a href="#">E04B 1/0038</a>
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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Masonry wall-ties, e.g. anchors	<a href="#">E04B 1/4178</a>
Reinforcing elements for brick walls, inserted between brick layers	<a href="#">E04B 2/10</a> , <a href="#">E04B 2/20</a> , <a href="#">E04B 2/34</a> , <a href="#">E04B 2/48</a>

**E04C 5/03****with indentations, projections, ribs, or the like, for augmenting the adherence to the concrete****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Rolling or cold-forming of concrete metallic reinforcement bars	<a href="#">B21B 1/163</a>
Bending of reinforcing metallic rods for concrete	<a href="#">B21D 11/15</a>

## E04C 5/04

**Mats** ({combined with reinforcing elements protruding out of the plane of the mat [E04C 5/0627](#); three-dimensional mats [E04C 5/0636](#)}; bases for plaster [E04F 13/04](#))

### Definition statement

*This place covers:*

Metallic reinforcing mats

### References

#### Limiting references

*This place does not cover:*

Metallic reinforcing mats combined with reinforcing elements protruding out of the plane of the mat	<a href="#">E04C 5/0627</a>
Three-dimensional metallic reinforcing mats	<a href="#">E04C 5/0636</a>
Bases for plaster	<a href="#">E04F 13/04</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Making metallic wire nets	<a href="#">B21F 27/00</a>
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## E04C 5/06

**of high bending resistance, i.e. of essentially three-dimensional [3D] extent, e.g. lattice girders** ({anchorage devices specially adapted for balconies [E04B 1/0038](#); supporting devices for connector reinforcing rods for concrete walls [E04G 21/125](#)})

### References

#### Limiting references

*This place does not cover:*

Anchorage devices specially adapted for balconies	<a href="#">E04B 1/0038</a>
Supporting devices for connector reinforcing rods for concrete walls, e.g. reinforcement connection boxes	<a href="#">E04G 21/125</a>

### Special rules of classification

Loose closed stirrups suitable to make prismatic or cylindrical reinforcement cages are classified in [E04C 5/0604](#).

Loose open stirrups suitable to make stirrup baskets are classified in [E04C 5/0622](#).

**E04C 5/0604**

{Prismatic or cylindrical reinforcement cages composed of longitudinal bars and open or closed stirrup rods ([E04C 5/0631](#) takes precedence)}

**References****Limiting references**

*This place does not cover:*

Reinforcing mats combined with separate prefabricated reinforcement cages or girders	<a href="#">E04C 5/0631</a>
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**Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Making wire network of tubular form, e.g. as reinforcement for pipes or pillars	<a href="#">B21F 27/121</a>
Making wire network of tubular form by attaching individual stirrups to longitudinal wires	<a href="#">B21F 27/125</a>

**Special rules of classification**

Loose closed stirrups suitable to make prismatic or cylindrical reinforcement cages are classified in [E04C 5/0604](#).

**Glossary of terms**

*In this place, the following terms or expressions are used with the meaning indicated:*

open stirrup rod	Rebar bent in an open loop
closed stirrup rod	Rebar bent in a closed loop

**E04C 5/0609**

{Closed cages composed of two or more coacting cage parts, e.g. transversally hinged or nested parts}

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Making wire network of tubular form by bending preformed mesh	<a href="#">B21F 27/127</a>
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**E04C 5/0613****{Closed cages made of one single bent reinforcement mat}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Making wire network of tubular form by bending preformed mesh	<a href="#">B21F 27/127</a>
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**E04C 5/0618****{Closed cages with spiral- or coil-shaped stirrup rod}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Columns or pillars made of concrete	<a href="#">E04C 3/34</a>
Making wire network of tubular form by attaching continuous stirrup to longitudinal wires, by rotation	<a href="#">B21F 27/122</a> , <a href="#">B21F 27/124</a>
Prefabricated foundation piles of reinforced concrete	<a href="#">E02D 5/30</a>
Concrete foundation piles cast in situ	<a href="#">E02D 5/34</a>

**E04C 5/0622****{Open cages, e.g. connecting stirrup baskets ([E04C 5/0609](#) takes precedence)}****References****Limiting references***This place does not cover:*

Closed cages composed of two or more co-acting cage parts	<a href="#">E04C 5/0609</a>
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**Special rules of classification**Loose stirrups suitable to make stirrup baskets are classified in [E04C 5/0622](#).**Glossary of terms***In this place, the following terms or expressions are used with the meaning indicated:*

stirrup basket	a substantially U-shaped channel like basket made of a series of parallel open stirrups positioned one after the other and linked by at least one longitudinal rebar
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**E04C 5/0627**

{Three-dimensional reinforcements composed of a prefabricated reinforcing mat combined with reinforcing elements protruding out of the plane of the mat ([E04C 5/0645](#) takes precedence)}

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Shear reinforcements	<a href="#">E04C 5/0645</a>
Making of plaster-carrying wire network	<a href="#">B21F 27/20</a>

**E04C 5/0631**

{Reinforcing mats combined with separate prefabricated reinforcement cages or girders ([E04C 5/064](#) takes precedence)}

**References****Limiting references**

This place does not cover:

Three-dimensional reinforcing mats composed of two parallel mats connected by separate connecting parts	<a href="#">E04C 5/064</a>
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**Special rules of classification**

[E04C 5/064](#) takes precedence

**Glossary of terms**

In this place, the following terms or expressions are used with the meaning indicated:

girder	a light-weight metallic girder that can also be used as concrete reinforcement
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**E04C 5/0636**

{Three-dimensional reinforcing mats composed of reinforcing elements laying in two or more parallel planes and connected by separate reinforcing parts ([E04C 5/0645](#) takes precedence)}

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Shear reinforcements	<a href="#">E04C 5/0645</a>
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## Glossary of terms

*In this place, the following terms or expressions are used with the meaning indicated:*

separate reinforcing parts	parts that are not connected to the reinforcing elements before being connected to them
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## E04C 5/064

**{the reinforcing elements in each plane being formed by, or forming a, mat of longitudinal and transverse bars}**

## References

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Making wire networks of three-dimensional form by connecting wire networks	<a href="#">B21F 27/121</a>
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## E04C 5/0645

**{Shear reinforcements, e.g. shearheads for floor slabs}**

## Definition statement

*This place covers:*

Metallic reinforcements specially adapted for shear reinforcement, e.g. shearheads for floor slabs, shear baskets, shear spiral reinforcements, shear studs,

## References

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Floor structures of extraordinary design	<a href="#">E04B 5/43</a>
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## E04C 5/065

**Light-weight girders, e.g. with precast parts (light-weight girders in general [E04C 3/08](#), [E04C 3/294](#))**

## Definition statement

*This place covers:*

Light-weight girders, e.g. with precast concrete, like the pre-fabricated light-weight girders for floor construction

## References

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Metallic girders with apertured web	<a href="#">E04C 3/08</a>
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Girders made of concrete combined with a girder-like structure extending laterally outside the element	<a href="#">E04C 3/294</a>
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## E04C 5/07

Reinforcing elements of material other than metal, e.g. of glass, of plastics, or not exclusively made of metal (metal elements with non-structural coatings [E04C 5/01](#))

### References

#### Limiting references

*This place does not cover:*

Metal elements with non-structural coatings	<a href="#">E04C 5/015</a> , <a href="#">E04C 5/017</a>
Anchoring devices specially adapted for balconies	<a href="#">E04B 1/0038</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Reinforcing elements for brick walls, inserted between brick layers	<a href="#">E04B 2/10</a> , <a href="#">E04B 2/20</a> , <a href="#">E04B 2/34</a> , <a href="#">E04B 2/48</a>
Increasing or restoring the load-bearing capacity of building construction elements	<a href="#">E04G 23/0218</a>

## E04C 5/073

{Discrete reinforcing elements, e.g. fibres}

### Definition statement

*This place covers:*

Non entirely metallic discrete reinforcing elements, i.e. suitable to be mixed with the concrete before pouring, e.g. glass or carbon fibres

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Filler material of fibre shape for concrete	<a href="#">C04B 20/0048</a>
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### Special rules of classification

Non entirely metallic discrete reinforcing elements with a well-defined shape other than granular are classified in [E04C 5/073](#) ; non entirely metallic discrete elements of granular shape or the shape of which is not defined are considered filler elements and are only classified in [C04B](#)

## E04C 5/08

**Members specially adapted to be used in prestressed constructions**  
 {(production of reinforced objects in general [B28B 23/00](#); prestressed structures produced in situ [E04G 21/12](#))}

### Definition statement

*This place covers:*

Members specially adapted to be used in prestressed constructions, e.g. prestressing tendons and cables, ducts, anchoring devices.

### References

#### Limiting references

*This place does not cover:*

Tensioning of moulded or shaped articles, at the factory	<a href="#">B28B 23/00</a> ; <a href="#">B28B 23/04</a>
Tools or methods for in situ tensioning	<a href="#">E04G 21/12</a>

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Anchors; Connections of cables to bridge parts	<a href="#">E01D 19/14</a>
Suspension cables for bridges	<a href="#">E01D 19/16</a>
Increasing or restoring the load-bearing capacity of building construction elements	<a href="#">E04G 23/0218</a>

## E04C 5/10

### Ducts

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Rigid pipes wound from sheets or strips of metal	<a href="#">F16L 9/165</a>
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## E04C 5/12

**Anchoring devices (tools or methods for tensioning {in situ} [E04G 21/12](#))**

### References

#### Limiting references

*This place does not cover:*

Tools or methods for tensioning in situ	<a href="#">E04G 21/12</a>
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**E04C 5/122****{the tensile members are anchored by wedge-action}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Construction of stressing jacks	<a href="#">E04G 21/121</a>
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**E04C 5/125****{the tensile members are profiled to ensure the anchorage, e.g. when provided with screw-thread, bulges, corrugations}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Coaxial connection of reinforcement bars by means of sleeves	<a href="#">E04C 5/165</a>
Making helical shapes on metallic bodies	<a href="#">B21H 3/00</a>
Ground anchors	<a href="#">E02D 5/80</a>
Anchoring bolts for galleries	<a href="#">E21D 21/00</a>

**E04C 5/16****Auxiliary parts for reinforcements, e.g. connectors, spacers, stirrups  
([E04C 5/06](#) takes precedence;) tools connecting reinforcing elements  
[E04G 21/12](#))****Definition statement***This place covers:*

Auxiliary parts for reinforcements, e.g. connectors and spacers

**References****Limiting references***This place does not cover:*

Tools for connecting reinforcing elements	<a href="#">E04G 21/12</a>
Supporting devices for connector reinforcing rods for concrete walls, e.g. reinforcement connection boxes	<a href="#">E04G 21/125</a>

**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Connecting stirrup baskets	<a href="#">E04C 5/0622</a>
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### Special rules of classification

Loose closed stirrups suitable to make prismatic or cylindrical reinforcement cages are classified in [E04C 5/0604](#).

Loose open stirrups suitable to make stirrup baskets are classified in [E04C 5/0622](#).

### E04C 5/162

{Connectors or means for connecting parts for reinforcements ([E04C 5/168](#) takes precedence)}

### References

#### Limiting references

*This place does not cover:*

Machines for joining reinforcing bars	<a href="#">E04G 21/122</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Spacers connecting parts for reinforcement and spacing the reinforcements from the form	<a href="#">E04C 5/168</a>
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### E04C 5/163

{the reinforcements running in one single direction}

### Definition statement

*This place covers:*

Connectors connecting reinforcements running in one single direction, either coaxially or only parallel to one another

### E04C 5/165

{Coaxial connection by means of sleeves}

### References

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Connections wire to wire by soldering or welding with additional connecting elements or material	<a href="#">B21F 15/08</a>
Making helical shapes on metallic bodies	<a href="#">B21H 3/00</a>
Connections using screw-thread elements for coaxial connections of two rods	<a href="#">F16B 7/182</a>

**E04C 5/166****{the reinforcements running in different directions}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Machines for joining reinforcing bars	<a href="#">E04G 21/122</a>
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**E04C 5/167****{Connection by means of clips or other resilient elements}****Definition statement***This place covers:*

Connection by means of clips or other resilient material of reinforcements running in different directions

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Clamping or clipping connections for rods forming a crossed-over connection	<a href="#">F16B 7/0493</a>
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**E04C 5/168****{Spacers connecting parts for reinforcements and spacing the reinforcements from the form}****Definition statement***This place covers:*

Spacers connecting parts for reinforcement together, and spacing the reinforcements from the form

**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Substantially metallic spacers	<a href="#">E04C 5/18</a>
Non substantially metallic spacers	<a href="#">E04C 5/20</a>

**E04C 5/18****{Spacers} of metal or substantially of metal {(E04C 5/168 takes precedence)}****Definition statement***This place covers:*

Metallic or substantially metallic spacers spacing the reinforcements from the form or spacing the reinforcements from one another, e.g. spacers between two reinforcing grids (upper and lower) in a floor structure

**References****Limiting references***This place does not cover:*

Spacers connecting parts for reinforcements and spacing the reinforcements from the form	<a href="#">E04C 5/168</a>
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**E04C 5/20****of material other than metal or with only additional metal parts, e.g. concrete or plastics spacers with metal binding wires {(E04C 5/168 takes precedence)}****Definition statement***This place covers:*

Spacers of material other than metal or with only additional metal parts, e.g. concrete or plastics spacers with metal binding wires, spacing the reinforcements from the form or spacing the reinforcements from one another, e.g. spacers between two reinforcing grids (upper and lower) in a floor structure

**References****Limiting references***This place does not cover:*

Spacers connecting parts for reinforcements and spacing the reinforcements from the form	<a href="#">E04C 5/168</a>
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