

CPC COOPERATIVE PATENT CLASSIFICATION

D TEXTILES; PAPER

TEXTILES OR FLEXIBLE MATERIALS NOT OTHERWISE PROVIDED FOR

D04 BRAIDING; LACE-MAKING; KNITTING; TRIMMINGS; NON-WOVEN FABRICS

D04H MAKING TEXTILE FABRICS, e.g. FROM FIBRES OR FILAMENTARY MATERIAL (weaving [D03](#); knitting [D04B](#); braiding {or lace-making} [D04C](#); net-making {or making knotted carpets} [D04G](#); sewing [D05B](#); tufting [D05C](#), {e.g. [D05C 15/04](#)}; finishing non-woven fabrics [D06](#)); **FABRICS MADE BY SUCH PROCESSES OR APPARATUS, e.g. FELTS, NON-WOVEN FABRICS; COTTON-WOOL; WADDING {NON-WOVEN FABRICS FROM STAPLE FIBRES, FILAMENTS OR YARNS, BONDED WITH AT LEAST ONE WEB-LIKE MATERIAL DURING THEIR CONSOLIDATION}** (non-woven fabrics having an intermediate or external layer of a different kind, e.g. of woven fabric, [B32B](#); {manufacturing hats [A42C](#); filtering material [B01D 39/00](#); making board or the like from wood fibre [B27N](#); producing shaped articles from mixtures containing fibres [B28B 1/52](#); making layered products from solid layers, at least one of which contains synthetic resin as an essential component [B32B 27/00](#); making or treating glass wool and mineral wool [C03B 37/00](#); compounding ingredients used as fillers for mortars and the like [C04B 14/38](#), [C04B 16/06](#), [C04B 20/0048](#); sintering plastics particles [C08J 9/24](#); manufacturing by extrusion of synthetic filaments and fibres in general [D01D](#); paper [D21C](#) - [D21H](#); making shaped articles from liquid suspensions of cellulose fibres [D21J](#)})

NOTES

1. In this subclass, the following expression is used with the meaning indicated:
 - "non-woven fabrics" means fabrics formed wholly or partly of textile material by processes comprising operations other than the weaving, knitting, braiding, lacing, or knotting of yarns, threads, or filaments for which provision is made in other subclasses of Section [D](#). This expression includes felts, cotton-wool, and wadding.
2. In this subclass:
 - some of the non-woven fabrics can also be regarded as "layered products" within the meaning of subclass [B32B](#), and further classification in that subclass should be considered in accordance with the notes thereto;
 - in cases where the making of non-woven fabrics involves the use of particular chemical compounds or compositions, e.g. for treating or bonding fibres, filaments, or yarns, further classification in other appropriate subclasses should also be considered.
3. By varying the proportions of fibres or threads, and the chemical compounds or compositions, the final products may be given the appearance of paper, cardboard, leather or the like.
4. In this subclass, a number of groups, e.g. [D04H 1/067](#), correspond to IPC2012.01

WARNING

Documents of the complete subclass [D04H](#) including all subgroups are in the process of being reorganised to the new groups corresponding to the IPC 2012.01 classification scheme defined below.

Kinds or types of non-woven fabrics; Apparatus or processes for making such products

1/00 Non-woven fabrics formed wholly or mainly of staple fibres or like relatively short fibres

1/005 . {Making three-dimensional articles by consolidation ([D04H 1/22](#) takes precedence)}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011.
The backfile is being reclassified into groups [D04H 1/00](#), [D04H 1/42](#)

1/02 . Cotton wool; Wadding

- 1/04 . . . from fleeces or layers composed of fibres having existing or potential cohesive properties, e.g. natural fibres, prestretched or fibrillated artificial fibres ([felting apparatus D04H 17/00](#))
- 1/06 . . . by treatment to produce shrinking, swelling, crimping or curling of fibres
- WARNING**
- Groups [D04H 1/067](#) and [D04H 1/073](#) are not complete pending a reorganisation. See also group [D04H 1/06](#)
- 1/067 . . . Regenerated cellulose series
- 1/073 . . . Acrylonitrile series
- 1/08 . . and hardened by felting; Felts or felted products
- 1/09 . . . Silk
- WARNING**
- Group [D04H 1/09](#) is not complete pending a reorganisation. See also group [D04H 1/08](#)
- 1/10 . . . Felts made from mixtures of fibres
- 1/12 and incorporating artificial organic fibres
- 1/14 and incorporating inorganic fibres
- 1/16 . . . Laminated felts in which the separate layers are united by a felting process
- 1/20 . . . Felts incorporating inserts or attachments, e.g. for ornamental purposes
- 1/22 . . . Three-dimensional articles formed by felting processes { ([formed by other consolidation processes D04H 1/005](#)) }
- 1/24 . . . Covers felted on to three-dimensional articles
- 1/26 . . Wood pulp
- 1/28 . . Regenerated cellulose series
- 1/30 . . Collagen
- 1/32 . . Synthetic pulp
- 1/40 . . from fleeces or layers composed of fibres without existing or potential cohesive properties
- WARNING**
- Groups [D04H 1/407](#) and [D04H 1/413](#) are not complete pending a reorganisation. See also group [D04H 1/40](#)
- Group [D04H 1/407](#) is not complete pending a reorganisation. See also group [D04H 1/40](#)
- 1/407 . . containing absorbing substances, e.g. activated carbon
- 1/413 . . containing granules other than absorbent substances
- 1/42 . . characterised by the use of certain kinds of fibres insofar as this use has no preponderant influence on the consolidation of the fleece
- WARNING**
- Groups [D04H 1/4209](#) - [D04H 1/52](#) are not complete pending a reorganisation. See also group [D04H 1/4209](#) and other subgroups of [D04H 1/42](#)
- 1/4209 . . . Inorganic fibres
- 1/4218 Glass fibres
- 1/4226 characterised by the apparatus for manufacturing the glass fleece
- 1/4234 Metal fibres
- 1/4242 Carbon fibres
- 1/425 . . . Cellulose series
- 1/4258 Regenerated cellulose series
- 1/4266 . . . Natural fibres not provided for in group [D04H 1/425](#)
- 1/4274 . . . Rags; Fabric scraps
- 1/4282 . . . Addition polymers
- 1/4291 Olefin series
- 1/43 Acrylonitrile series
- 1/4309 Polyvinyl alcohol
- 1/4318 Fluorine series
- 1/4326 . . . Condensation or reaction polymers
- 1/4334 Polyamides
- 1/4342 Aromatic polyamides
- 1/435 Polyesters
- 1/4358 Polyurethanes
- 1/4366 Phenol series
- 1/4374 . . . using different kinds of webs, e.g. by layering webs
- 1/4382 . . . Stretched reticular film fibres; Composite fibres; Mixed fibres; Ultrafine fibres; Fibres for artificial leather
- 1/4391 . . . characterised by the shape of the fibres
- 1/44 . . the fleeces or layers being consolidated by mechanical means, e.g. by rolling
- 1/45 . . . by forming intermeshing loops or stitches from some of the fibres
- 1/46 . . . by needling or like operations to cause entanglement of fibres ([D04H 1/45 takes precedence](#); [needling machines D04H 18/00](#))
- 1/465 {[Hydraulic needling](#)}
- WARNING**
- This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 1/42](#) and sub-groups, [D04H 1/46](#), [D04H 1/492](#), [D04H 1/495](#) and [D04H 18/04](#)
- 1/48 in combination with at least one other method of consolidation
- 1/482 in combination with shrinkage
- 1/485 in combination with weld-bonding
- 1/488 in combination with bonding agents
- 1/49 entanglement by fluid jet in combination with another consolidation means
- 1/492 by fluid jet ([D04H 1/49 takes precedence](#))
- 1/495 for formation of patterns, e.g. drilling or rearrangement
- 1/498 entanglement of layered webs
- 1/50 . . . by treatment to produce shrinking, swelling, crimping or curling of fibres ([in combination with needling D04H 1/482](#))
- 1/52 . . . by applying or inserting filamentary binding elements

- 1/54 . . by welding together the fibres, e.g. by partially melting or dissolving ([in combination with needling D04H 1/485](#))
- WARNING**
- Groups [D04H 1/54](#) - [D04H 1/565](#) are not complete pending a reorganisation. See also group [D04H 1/541](#) and other subgroups of [D04H 1/54](#)
- 1/5405 . . . {at spaced points or locations}
- WARNING**
- This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 1/42](#) and sub-groups, [D04H 1/54](#) and sub-groups
- 1/541 . . . Composite fibres, e.g. sheath-core, sea-island or side-by-side; Mixed fibres
- 1/542 . . . Adhesive fibres
- 1/544 . . . Olefin series
- 1/545 . . . Polyvinyl alcohol
- 1/546 . . . Polyvinyl acetate
- 1/548 . . . Acrylonitrile series
- 1/549 . . . Polyamides
- 1/55 . . . Polyesters
- 1/551 . . . Resins thereof not provided for in groups [D04H 1/544](#) - [D04H 1/55](#)
- 1/552 . . . by applying solvents or auxiliary agents
- 1/554 . . . by radio-frequency heating
- 1/555 . . . by ultrasonic heating
- 1/556 . . . by infrared heating
- 1/558 . . . in combination with mechanical or physical treatments other than embossing
- 1/559 . . . the fibres being within layered webs
- 1/56 . . . in association with fibre formation, e.g. immediately following extrusion of staple fibres
- 1/565 . . . {by melt-blowing}
- WARNING**
- This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 1/42](#) and sub-groups, [D04H 1/54](#) and sub-groups
- 1/58 . . by applying, incorporating or activating chemical or thermoplastic bonding agents, e.g. adhesives ([in combination with needling D04H 1/488](#))
- WARNING**
- Groups [D04H 1/587](#) - [D04H 1/68](#) are not complete pending a reorganisation. See also groups [D04H 1/64](#) and other subgroups of [D04H 1/58](#)
- 1/587 . . . characterised by the bonding agents used
- 1/593 . . . to layered webs
- 1/60 . . . the bonding agent being applied in dry state, e.g. thermo-activatable agents in solid or molten state, and heat being applied subsequently
- 1/62 at spaced points or locations
- 1/64 . . . the bonding agent being applied in wet state, e.g. chemical agents in dispersions or solutions
- 1/641 {characterised by the chemical composition of the bonding agent}
- WARNING**
- This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 1/42](#) and sub-groups and [D04H 1/64](#) and sub-groups
- 1/642 {characterised by the impregnation or treatment-process or apparatus}
- WARNING**
- This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 1/42](#) and sub-groups and [D04H 1/645](#) and sub-groups
- 1/643 {characterised by a combination of the chemical composition and the impregnation or treatment process or apparatus}
- WARNING**
- This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 1/42](#) and sub-groups and [D04H 1/645](#) and sub-groups
- 1/645 Impregnation followed by a solidification process
- 1/65 using mixed or composite fibres
- 1/655 characterised by the apparatus for applying bonding agents
- 1/66 at spaced points or locations ([D04H 1/68 takes precedence](#))
- 1/68 the bonding agent being applied in the form of foam
- 1/70 . characterised by the method of forming fleeces or layers, e.g. reorientation of fibres
- WARNING**
- Groups [D04H 1/72](#) - [D04H 1/76](#) are not complete pending a reorganisation. See also group [D04H 1/72](#)
- 1/72 . . the fibres being randomly arranged
- 1/724 . . . forming webs during fibre formation, e.g. flash-spinning
- 1/728 . . . by electro-spinning {(electro-spinning methods and apparatus [D01D 5/0007](#))}
- 1/732 . . . by fluid current, e.g. air-lay
- 1/736 . . . characterised by the apparatus for arranging fibres ([D04H 1/728](#), [D04H 1/732 take precedence](#))
- 1/74 . . the fibres being orientated, e.g. in parallel {(anisotropic fleeces)}
- 1/76 . . otherwise than in a plane, e.g. in a tubular way

3/00 Non-woven fabrics formed wholly or mainly of yarns or like filamentary material of substantial length

- 3/002 . Inorganic yarns or filaments
- 3/004 . . Glass yarns or filaments
- 3/005 . Synthetic yarns or filaments ([D04H 3/013 takes precedence](#))
- 3/007 . . Addition polymers
- 3/009 . . Condensation or reaction polymers
- 3/011 . . . Polyesters
- 3/013 . Regenerated cellulose series
- 3/015 . Natural yarns or filaments
- 3/016 . characterised by the fineness
- 3/018 . characterised by the shape
- 3/02 . characterised by the method of forming fleeces or layers, e.g. reorientation of yarns or filaments
- 3/03 . . at random
- 3/033 . . . reorientation immediately after yarn or filament formation
- 3/037 . . . reorientation by liquid
- 3/04 . . in rectilinear paths, e.g. crossing at right angles
- 3/045 . . . for net manufacturing
- 3/05 . . in another pattern, e.g. zig-zag, sinusoidal {[\(D04H 3/04 takes precedence\)](#)}
- 3/07 . . otherwise than in a plane, e.g. in a tubular way
- 3/073 . . . Hollow cylinder shaped
- 3/077 . . . Stick, rod or solid cylinder shaped
- 3/08 . characterised by the method of strengthening or consolidating
- 3/10 . . with bonds between yarns or filaments made mechanically
- 3/102 . . . {[by needling](#)}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 3/002](#) - [D04H 3/018](#), [D04H 3/105](#) and [D04H 3/11](#)

- 3/105 . . . by needling ([needling machines D04H 18/00](#))
- 3/11 . . . by fluid jet
- 3/115 . . . by applying or inserting filamentary binding elements
- 3/12 . . with filaments or yarns secured together by chemical or thermo-activatable bonding agents, e.g. adhesives, applied or incorporated in liquid or solid form
- 3/14 . . with bonds between thermoplastic yarns or filaments produced by welding
- 3/147 . . . Composite yarns or filaments
- 3/153 . . . Mixed yarns or filaments
- 3/16 . . with bonds between thermoplastic filaments produced in association with filament formation, e.g. immediately following extrusion
- 3/163 . . . {[at spaced points or locations](#)}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 3/002](#) - [D04H 3/018](#), and [D04H 3/16](#)

- 3/166 . . . {the filaments being flash-spun}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 3/002](#) - [D04H 3/018](#), and [D04H 3/16](#)

5/00 Non woven fabrics formed of mixtures of relatively short fibres and yarns or like filamentary material of substantial length**WARNING**

Groups [D04H 5/02](#) - [D04H 5/12](#) are not complete pending a reorganisation. See also group [D04H 5/02](#) and other subgroups of [D04H 5/00](#)

- 5/02 . strengthened or consolidated by mechanical methods, e.g. needling ([needling machines D04H 18/00](#))
- 5/03 . . by fluid jet
- 5/04 . strengthened or consolidated by applying or incorporating chemical or thermo-activatable bonding agents in solid or liquid form
- 5/06 . strengthened or consolidated by welding-together thermoplastic fibres, filaments, or yarns
- 5/08 . characterised by the method of forming fleeces or layers, e.g. reorientation of fibres or yarns
- 5/10 . . otherwise than in a plane, e.g. in a tubular way
- 5/12 . Glass fibres
- 11/00 Non-woven pile fabrics (layered products forming non-woven pile fabrics [B32B](#))**
- 11/04 . formed by zig-zag folding of a fleece or layer of staple fibres, filaments, or yarns, strengthened or consolidated at the folds
- 11/08 . formed by creation of a pile on at least one surface of a non-woven fabric without addition of pile-forming material, e.g. by needling, by differential shrinking ([needling machines D04H 18/00](#))

13/00 Other non-woven fabrics

- 13/001 . {Making non-woven fabrics from staple fibres, filaments or yarns, bonded to at least one web-like material, e.g. woven, knitted non-woven fabric, paper, leather, during consolidation}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 13/00](#), [D04H 1/4374](#) and [B32B](#)

- 13/002 . . {characterised by the disposition or nature of their elements}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 13/00](#), [D04H 1/4374](#) and [B32B](#)

- 13/003 . . {strengthened or consolidated by mechanical methods ([needling machines D04H 18/00](#); [knitting D04B](#), [sewing D05B](#))}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 13/00](#), [D04H 1/4374](#), [D04H 1/44](#), [D04H 1/45](#) and sub-groups, [D04H 1/52](#), [D04H 3/105](#), [D04H 3/11](#), [D04H 3/115](#), [D04H 5/02](#) - [D04H 5/08](#) and [B32B](#)

- 13/005 . . . {by needling}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 13/00](#), [D04H 1/46](#) and sub-groups, [D04H 1/593](#), [D04H 3/105](#), [D04H 3/11](#), [D04H 3/115](#), [D04H 5/02](#) - [D04H 5/08](#) and [B32B](#)

- 13/006 . . {strengthened or consolidated by the use of bonding agents in solid or liquid form}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 13/00](#), [D04H 1/48](#) and sub-groups, [D04H 1/498](#), [D04H 5/04](#) and [B32B](#)

- 13/007 . . {strengthened or consolidated by welding together the various components}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 13/00](#), [D04H 1/54](#) and sub-groups, [D04H 1/559](#), [D04H 5/06](#) and [B32B](#)

- 13/008 . {Glass fibre products; Complete installations for making them}

WARNING

This group is no longer used for the classification of new documents as from April 1, 2011. The backlog of this group is being continuously reclassified to [D04H 1/4218](#), [D04H 1/4226](#); [D04H 3/002](#) and [D04H 5/12](#)

- 13/02 . Production of non-woven fabrics by partial defibrillation of oriented thermoplastics films

17/00 Felting apparatus

- 17/10 . for felting between rollers, e.g. heated rollers
17/12 . . Multi-roller apparatus

18/00 Needling machines**WARNING**

Groups [D04H 18/02](#) and [D04H 18/04](#) are not complete pending a reorganisation. See also group [D04H 18/00](#)

- 18/02 . with needles
18/04 . with water jets