D CPC - 2019.08

D21H COOPERATIVE PATENT CLASSIFICATION

D TEXTILES; PAPER

PAPER

D21 PAPER-MAKING; PRODUCTION OF CELLULOSE

D21H PULP COMPOSITIONS; PREPARATION THEREOF NOT COVERED BY SUBCLASSES D21C OR D21D; IMPREGNATING OR COATING OF PAPER; TREATMENT OF FINISHED PAPER NOT COVERED BY CLASS B31 OR SUBCLASS D21G; PAPER NOT OTHERWISE PROVIDED FOR

NOTES
1. This subclass covers also pulp compositions for the preparation of fibreboard or other fibrous articles by wet processes.
2. In this subclass, the following terms are used with the meaning indicated:
   • "pulp" means a dispersion, (e.g. an aqueous suspension,) comprising paper-making fibres and optional additives, which is to be processed, and covers the term "stock"; it also means dry paper-making fibres which are to be made into paper by either wet or dry processes;
   • "paper" means paper, cardboard or wet-laid non-woven fabrics.
3. In groups D21H 11/00 - D21H 15/00, in the absence of an indication to the contrary, classification is made in the last appropriate place.

WARNINGS
1. The following IPC group is not in the CPC scheme. The subject matter for this IPC group is classified in the following CPC group:
   D21H 27/12 covered by D21H 27/00, H01B 3/52
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

IPC4 groups

1/00 {Paper; Cardboard (fibreboard D21J)}

   NOTE
   Layered products classified in this group are also classified in subclass B32B

1/02 . . {Multi-ply material finished plies}
1/04 . . {by using an adhesive}
1/06 . . {Apparatus}
1/08 . . {with incorporated laminae of threads or fabric}

3/00 {Paper or cardboard prepared by adding substances to the pulp or to the formed web on the paper-making machine and by applying substances to finished paper or cardboard (on the paper-making machine), also when the intention is to impregnate at least a part of the paper body}

   NOTE
   A compound is always classified in the last appropriate place.

3/82 . . {by adding insoluble coloured substances, e.g. powders, fibres, pieces of metal, for obtaining different colours in the paper fancy papers; substances characterised by their physical appearance, e.g. form, rather than by their chemical constitution}

3/825 . . {substances having a characteristic form, e.g. powders, disintegrated resin foams}

5/00 {Special paper or cardboard not otherwise provided for (duplicating or recording paper B41M)}
5/0002 . . {Flame-resistant papers; (complex) compositions rendering paper fire-resistant}
5/0005 . . {Processes or apparatus specially adapted for applying liquids or other fluent materials to finished paper or board, e.g. impregnating, coating (applying liquids to surfaces in general B05; treating textile materials by liquids, gases or vapours D06B; impregnated or coated fibreboard D21J 1/08; apparatus for making patterned paper D21H 5/06; printing machines B41F)}

   NOTE
   Equipment related to specific chemical treatment, see relevant sub-groups for this treatment; e.g. parchmentising or vulcanising D21H 5/08, treatment with viscose D21H 17/25

5/0007 . . {Pretreatment of paper to which liquids or other fluent materials are to be applied}
5/001 . . {by treating paper or board in discontinuous form, e.g. separate sheets, blanks, paper rolls, or the like}
5/0012 . . {by bringing paper into contact with an excess of fluids, the paper carrying away only a part of the fluid material, e.g. by passing through liquids, gases or vapours}
5/0015 . . . [only one side of the paper being in contact with the treating medium, e.g. paper carried by support]
5/0017 . . . . [Trailing blade coaters, e.g. blade engaging paper and forming bottom wall of reservoir]
5/002 . . . [the paper being at least partly surrounded by treating medium on both sides]
5/0022 . . . [treating medium being a gas or vapour]
5/0025 . . . [by contact with a device carrying the treating material (C12 take precedence)]
5/0027 . . . [by a rubbing device, e.g. with brushes or pads]
5/003 . . . [with a roller]
5/0032 . . . [Details thereof, e.g. surface characteristics, peripheral speed]
5/0035 . . . . [the coating material on the applicator roller being subjected to a particular treatment before applying to paper]
5/0037 . . . . [Reverse roll coating, e.g. applicator surface moving in direction opposite to that of paper]
5/004 . . . . [the treating material being non-fluent at the moment of transfer, e.g. in form of preformed, at least partially hardened, coating]
5/0042 . . . [by pouring or allowing to flow in a continuous stream onto the surface, the entire stream being carried away by the paper]
5/0045 . . . [Falling curtain method]
5/0047 . . . [by spraying or projecting (D21H 5/0022 takes precedence)]
5/005 . . . . [involving several different techniques of application (treatments in which the characteristics of a single treatment are of interest only, or in which all treatments have characteristics provided for in a single sub-group, see the relevant sub-groups for the single treatment; several superposed coatings D21H 19/82; apparatus for making multi-ply material D21H 1/06)]
5/0052 . . . . [Plural serial stages]
5/0055 . . . . [Plural parallel stages]
5/0057 . . . . [Apparatus permitting switching from one technique to another]
5/006 . . . . [Controlling or regulating (controlling or regulating in general G05)]
5/0062 . . . . [Regulating the amount or the distribution, e.g. smoothing, of essentially fluent material already applied to the paper; Recirculating excess coating material applied to paper (after-treatment D21H 25/00 - D21H 25/18)]
5/0065 . . . . [with blades (trailing blade D21H 5/0017)]
5/0067 . . . . [with an essentially cylindrical body, e.g. roll or rod]
5/007 . . . . . [with a blast of gas or vapour, e.g. air knife]
5/0072 . . . . [Anti-slip papers]
5/0075 . . . . [Anti-friction, anti-abrasive or release paper (processes for obtaining an anti-friction or anti-adhesive surface B05D 5/08; adhesive materials on paper characterised by the release coating composition C09J 7/21)]
5/0077 . . . . [Transparent papers, e.g. paper treated with transparent-rendering compositions or glassine paper prepares from well-hydrated stock (paper with watermarks B41M 3/10; watermaking devices D21F 1/44)]
5/008 . . . . . [characterised by the use of special fibrous materials as well as special compounds (use of special fibrous materials D21H 5/12; adding substances to the pulp or to the formed web D21H 3/00)]
5/0082 . . . [Wall papers (printed wallpapers B41M 3/18; pregunmed wall paper C09J 2/21)]
5/0085 . . . [Paper for surface-protection and decorative purposes, e.g. pressure laminates (wall paper D21H 5/0062; multi-ply material D21H 1/02)]
5/0087 . . . . [Aspect concerning the core layer(s)]
5/009 . . . . . [Aspect concerning the anchor layer(s)]
5/0092 . . . [Post-treated paper (after-treatment following application of substances to finished paper D21H 25/00 - D21H 25/18; D21H 5/0062; after-treatment of printed works B41M 7/00; working paper B31F; paper from fibres which can be modified D21H 5/1272)]
5/0095 . . . . [with means capable of destructing or weakening the paper structure, e.g. cellulose decomposing agents (working-up waste paper D21C 5/02)]
5/0097 . . . . [with means restoring or reinforcing the paper-structure (preserving paintings B44D 7/00; multi-ply material with incorporated laminae of threads or fabric D21H 1/08)]
5/02 . . . [Patterned paper]
5/025 . . . . . [Webs provided with apertures]
5/04 . . . . . . [marbled]
5/06 . . . . . [Apparatus]
5/08 . . . . . [Vegetable parchment]
5/12 . . . [characterised by the use of special fibrous materials (felts or other non-woven fabrics D04)]
5/1209 . . . . . [of protein fibres]
5/1218 . . . . . [of crimped or crimpable fibres]
5/1227 . . . . . [of polysaccharide fibres other than cellulose, e.g. alginate fibres]
5/1236 . . . . . [of fibres which have been treated to render them suitable for sheet formation, e.g. fibrillatable fibres]
5/1245 . . . . . [of long or continuous filaments]
5/1254 . . . . . [of fibres which have been treated to improve their dispersion in the paper-making furnish]
5/1263 . . . . . [of fibres which have been swollen]
5/1272 . . . . . [of fibres which can be physically or chemically modified during or after web formation (after treatment of coated or impregnated papers D21H 25/00 - D21H 25/18)]
5/1281 . . . . . [by chemical treatment]
5/129 . . . . . . [by thermal treatment]
5/14 . . . . . . [of cellulose fibres only]
5/141 . . . . . . [of fibrous cellulose derivatives]
5/143 . . . . . . [grafted or encapsulated cellulose]
5/145 . . . . . . [cellulose esters]
5/146 . . . . . . [cellulose acetate]
5/148 . . . . . . [viscose]
5/16 . . . . . [Tobacco or cigarette paper]
5/18 . . . . . . [of inorganic fibres with or without cellulose fibres]
5/183 . . . . . . [of asbestos fibres]
5/186 . . . . . . [of mica fibres or flakes]
5/20 . . . . . . [of organic non-cellulosic fibres too short for spinning, with or without cellulose fibres]
5/202 . . . . . . [polyolefins]
5/205 . . . . . . [acyrlic fibres]
5/207 . . . [polyester fibres]
5/22 . . . [Fungicidal, bactericidal, insecticidal, disinfecting, antiseptic, or corrosion-inhibiting paper antistatic, antioxygenic paper (toilet paper A47K 10/16)]
5/24 . . . (having enhanced flexibility or extensibility produced by mechanical treatment of the unfinished paper (crèping paper B31F 1/12; making patterned paper D21F 11/006, apertured paper D21F 11/008)]
5/245 . . . [obtained by compressing the (moist) paper in directions lying in, and optionally perpendicular to, the paper plane, e.g. plain-surfaced Clupak papers]
5/26 . . . [Special paper or cardboard manufactured by dry method; Apparatus or processes for forming webs by dry method from mainly short-fibre or particle material, e.g. paper pulp (making board from wood, e.g. lignocellulosic, particles or fibres B22N 1/00 and subgroups; making non-woven fabrics from textile fibres D04H 1/72; machines for forming diapers A61F 13/15585; lap-forming devices in preliminary treatment of fibres, e.g. for spinning D01G 25/00)]
5/2607 . . . [Pretreatment and individualisation of the fibres, formation of the mixture fibres-gas and laying the fibres on a forming surface (manufacture of a pulp sheet or dewatered pulp D21C 9/185)]
5/2614 . . . [Detachment of the fibres from their compressed state, e.g. by disintegration of a pulpboard (mechanical treatment of fibrous raw materials by dry methods D21B 1/06)]
5/2621 . . . [Distribution of the fibres in the gas stream and on the forming surface]
5/2628 . . . [Formation of a product from several constituents, e.g. blends of various types of fibres, fillers and/or binders or formation from various sources and/or streams or fibres (mixing non-fibrous materials with fibres as a preliminary treatment of fibres, e.g. for spinning D01G 13/00)]
5/2635 . . . [forming a final homogeneous product]
5/2642 . . . [forming a final non-homogeneous product]
5/265 . . . [Treatment of the formed web]
5/2657 . . . [Consolidation]
5/2664 . . . [Addition of a binder, e.g. synthetic resins or water]
5/2671 . . . . . . [Compression of the web, optionally with the use of a binder]
5/2678 . . . [Manufacture of layered products (assembly of superposed sheets), comprising the consolidation of such a structure (formation of a web by dry method directly on to other webs formed solely by dry method D21H 5/2628 and subgroups)]
5/2685 . . . [by dry method on to a web or on or between several preformed webs, at least one of which has been formed by another method, e.g. by wet method]
5/2692 . . . [Assembly of several preformed webs, at least one of which has been formed by dry method]

11/04 . . . Kraft or sulfate pulp
11/06 . . . Sulfite or bisulfite pulp
11/08 . . . Mechanical or thermomechanical pulp
11/10 . . . Mixtures of chemical and mechanical pulp
11/12 . . . Pulp from non-woody plants or crops, e.g. cotton, flax, straw, bagasse
11/14 . . . Secondary fibres (working-up waste paper D21C 5/02)
11/16 . . . modified by a particular after-treatment
11/18 . . . Highly hydrated, swollen or fibrillatable fibres
11/20 . . . Chemically or biochemically modified fibres
11/22 . . . cationised

13/00 Pulp or paper, comprising synthetic cellulose or non-cellulose fibres or web-forming material (chemical features in the manufacture of artificial fibres D01F)
13/02 . . . Synthetic cellulose fibres
13/04 . . . Cellulose ethers
13/06 . . . Cellulose esters
13/08 . . . from regenerated cellulose
13/10 . . . Organic non-cellulose fibres
13/12 . . . from macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
13/14 . . . Polyalkenes, e.g. polyethylene
13/16 . . . Polyalkenylalcohols; Polyalkenylenethers; Polyalkenylenesters
13/18 . . . Polymers of unsaturated acids or derivatives thereof, e.g. polyacrylonitriles
13/20 . . . from macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
13/22 . . . Condensation polymers of aldehydes or ketones
13/24 . . . Polymers
13/26 . . . Polyamides; Polyimides
13/28 . . . from natural polymers
13/30 . . . Non-cellulose polysaccharides
13/32 . . . . . . Alginate fibres
13/34 . . . . . . Protein fibres
13/36 . . . . . . Inorganic fibres or flakes
13/38 . . . . . . siliceous
13/40 . . . . . . vitreous, e.g. mineral wool, glass fibres
13/42 . . . . . . Asbestos
13/44 . . . . . . Flakes, e.g. mica, vermiculite
13/46 . . . . . . Non-siliceous fibres, e.g. from metal oxides
13/48 . . . . . . Metal or metallised fibres
13/50 . . . . . . Carbon fibres

15/00 Pulp or paper, comprising fibres or web-forming material characterised by features other than their chemical constitution
15/02 . . . characterised by configuration
15/04 . . . crimped, kinked, curled or twisted fibres
15/06 . . . Long fibres, i.e. fibres exceeding the upper length limit of conventional paper-making fibres; Filaments
15/08 . . . Flakes (D21H 13/44 takes precedence)
15/10 . . . Composite fibres
15/12 . . . partly organic, partly inorganic
Non-fibrous material added to the pulp, characterised by its constitution; Paper-impregnating material characterised by its constitution

**NOTE**

In this group, in the absence of an indication to the contrary, a material is classified in the last appropriate place.

17/005 . . . (Microorganisms or enzymes)
17/01 . . . Waste products, e.g. sludge
17/02 . . . Material of vegetable origin (proteins D21H 17/22; lignins D21H 17/23; polysaccharides D21H 17/24; rosin D21H 17/62)
17/03 . . . Non-macromolecular organic compounds
17/04 . . . Hydrocarbons
17/05 . . . containing elements other than carbon and hydrogen only
17/06 . . . Alcohols; Phenols; Ethers; Aldehydes; Ketones; Acetals; Ketals
17/07 . . . Nitrogen-containing compounds
17/08 . . . . Isocyanates
17/09 . . . . Sulfur-containing compounds
17/10 . . . . Phosphorus-containing compounds
17/11 . . . . Halides
17/12 . . . . Organo-metallic compounds
17/13 . . . . Silicon-containing compounds
17/14 . . . . Carboxylic acids; Derivatives thereof
17/15 . . . . Polycarboxylic acids, e.g. maleic acid
17/16 . . . . . . Addition products thereof with hydrocarbons
17/17 . . . . . Ketenes, e.g. ketene dimers
17/18 . . . . . forming new compounds in situ, e.g. within the pulp or paper, by chemical reaction with itself, or other added substances, e.g. by grafting on the fibres
17/19 . . . . . by reactions only involving carbon-to-carbon unsaturated bonds
17/20 . . . Macromolecular organic compounds
17/21 . . . . of natural origin; Derivatives thereof
17/22 . . . . Proteins
17/23 . . . . Lignins
17/24 . . . . Polysaccharides
17/25 . . . . . . Cellulose
17/26 . . . . . . Ethers thereof
17/27 . . . . . . Esters thereof
17/28 . . . . . . Starch
17/29 . . . . . . cationic
17/30 . . . . . . Algmic acid or alginites
17/31 . . . . . . Gums
17/32 . . . . . . Guar [or other polygalactomannan] gum
17/33 . . . . . . Synthetic macromolecular compounds
17/34 . . . . . . obtained by reactions only involving carbon-to-carbon unsaturated bonds
17/35 . . . . . . Polylekenes, e.g. polystyrene
17/36 . . . . . . Polylekenylcoholos; Polylekenylethers; Polylekenylesteres
17/37 . . . . . . Polymers of unsaturated acids or derivatives thereof, e.g. polyacrylates
17/375 . . . . . . {Poly(meth)acrylamide}
17/38 . . . . . . containing crosslinkable groups
17/39 . . . . . . forming ether crosslinkages, e.g. alklyol groups
17/40 . . . . . . unsaturated
17/41 . . . . . . containing ionic groups
17/42 . . . . . . anionic
17/43 . . . . . . Carboxyl groups or derivatives thereof
17/44 . . . . . . cationic
17/45 . . . . . . Nitrogen-containing groups
17/455 . . . . . . . {comprising tertiary amine or being at least partially quaternised}
17/46 . . . . . . obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
17/47 . . . . . . Condensation polymers of aldehydes or ketones
17/48 . . . . . . with phenols
17/49 . . . . . . with compounds containing hydrogen bound to nitrogen
17/50 . . . . . . Acyclic compounds
17/51 . . . . . . Triazines, e.g. melamine
17/52 . . . . . . Epoxy resins
17/53 . . . . . . Polymers; Polymers
17/54 . . . . . . obtained by reactions forming in the main chain of the macromolecule a linkage containing nitrogen
17/55 . . . . . . Polymides; Polyiminoamides; Polyester-amides
17/56 . . . . . . Polymides; Polymides; Polyester-imides
17/57 . . . . . . Polyureas; Polyurethanes
17/58 . . . . . . obtained by reactions forming in the main chain of the macromolecule a linkage containing sulfur
17/59 . . . . . . obtained by reactions forming in the main chain of the macromolecule a linkage containing silicon
17/60 . . . Waxes
17/61 . . . Bitumen
17/62 . . . Rosin; Derivatives thereof
17/63 . . . Inorganic compounds
17/64 . . . Alkaline compounds
17/65 . . . Acid compounds
17/66 . . . Salts, e.g. alums
17/67 . . . Water-insoluble compounds, e.g. fillers, pigments
17/675 . . . . . . [Oxides, hydroxides or carbonates]
17/68 . . . . . . siliceous, e.g. clays
17/69 . . . . . . modified, e.g. by association with other compositions prior to incorporation in the pulp or paper
17/70 . . . . . . forming new compounds in situ, e.g. within the pulp or paper, by chemical reaction with other substances added separately
17/71 . . . . . . {Mixtures of material (D21H 17/69 takes precedence); Pulp or paper comprising several different materials not incorporated by special processes (D21H 23/10, D21H 23/70, D21H 23/76 take precedence)}
17/72 . . . . . . [of organic material]
17/73 . . . . . . [of inorganic material]
17/74 . . . . . . [of organic and inorganic material]
19/00 . . . Coated paper (coated fibreboard D21J 1/08); Coating material (recording sheets characterised by the coating used to improve ink, dye or pigment receptivity B41M 5/50)
19/02 . . . Metal coatings (D21H 19/66 takes precedence)
Coated paper characterised by the paper substrate

Coatings characterised by a special visual effect, e.g. in the presence of acid or alkaline compounds

applied as a solution using water as the only solvent, e.g. in aqueous emulsion, with internal voids, e.g. bubble coatings

applied in a form other than the aqueous solution defined in group D21H 19/12

comprising curable or polymerisable compounds (D21H 19/24 takes precedence)

comprising waxes

comprising macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds

Polyalkenes, e.g. polystyrene

comprising macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds

Aminoplasts

Polymers; Polymides; Polyimides

obtained by reactions forming a linkage containing silicon in the main chain of the macromolecule

comprising cellulose or derivatives thereof

Coatings with pigments (D21H 19/66 takes precedence; metal powder D21H 19/06)

characterised by the pigments

Oxides, hydroxides or carbonates

siliceous, e.g. clays

at least partly organic

characterised by the other ingredients, e.g. the binder or dispersing agent

Non-macromolecular organic compounds

Diolenfs, e.g. butadiene; Aromatic vinyl monomers, e.g. styrene; Polymerisable unsaturated acids or derivatives thereof, e.g. acrylic acid

Proteins

Cellulose; Derivatives thereof

Starch

Macromolecular organic compounds or oligomers thereof obtained by reactions only involving carbon-to-carbon unsaturated bonds

Polymers or oligomers of diolenfs, aromatic vinyl monomers or unsaturated acids or derivatives thereof

Polyalkenylationcohols; Polyalkenylethers; Polyanilines

Macromolecular organic compounds or oligomers thereof obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds

Inorganic compounds

Coatings characterised by a special visual effect, e.g. patterned, textured (marbled paper D21H 27/04)

uneven, broken, discontinuous

with internal voids, e.g. bubble coatings

Coated paper characterised by the paper substrate

the substrate having an uneven surface, e.g. crèpe or corrugated paper

the substrate having specific absorbent properties

being substantially impervious to the coating

Paper comprising more than one coating (D21H 19/02 takes precedence)

superposed (D21H 19/84 takes precedence)

{two superposed coatings, both being pigmented}

{two superposed coatings, both being non-pigmented}

{two superposed coatings, the first applied being pigmented and the second applied being non-pigmented}

{two superposed coatings, the first applied being non-pigmented and the second applied being pigmented}

on both sides of the substrate

Non-fibrous material added to the pulp, characterised by its function, form or properties; Paper-impregnating or coating material, characterised by its function, form or properties

Agents for preventing deposition on the paper mill equipment, e.g. pitch or slime control (removal of fats, resins, pitch, or waxes D21C 9/08)

Slime-control agents

Paper forming aids

Dispersing agents for fibres

Retention agents or drainage improvers

Defoamers

caracterised by function or properties in or on the paper (D21H 19/66, D21H 27/02 takes precedence)

{Agents preventing ageing of paper, e.g. radiation absorbing substances}

{Créping adhesives}

Sizing or water-repelling agents

Reinforcing agents

Wet strength agents

Agents rendering paper porous, absorbent or bulky

Surfactants

Agents rendering paper transparent or translucent

Colorants; Pigments or opacifying agents

{ insoluble}

{Agents preventing optical bleaching (D21H 21/40 takes precedence)}

Bleaching agents (bleaching cellulose pulp D21C 9/10)

Ignifugeants

Biocidal agents, e.g. fungicidal, bactericidal, insecticidal agents

Corrosion-inhibiting agents or anti-oxidants

Agents facilitating proof of genuineness or preventing fraudulent alteration, e.g. for security paper (watermarking B41M 3/10, B21F 1/44; security printing B41M 3/14; securities or testing paper currency or valuable papers for genuineness G07D 7/00)

Ribbons or strips (filaments D21H 15/06)

Latent security elements, i.e. detectable or becoming apparent only by use of special verification or tampering devices or methods
Processes or apparatus for adding material to the pulp or to the paper (applying liquids or other fluent material to surfaces, in general B05; processes for making continuous lengths of paper D21F 11/00)

**NOTE:**
Processes or apparatus used for addition to the paper during its manufacture, i.e. on-machine, are classified in groups D21H 23/24 - D21H 23/28 if they are specially influenced by, or specially adapted to the paper-making process.

23/02 . . . . . characterised by the manner in which substances are added
23/04 . . . . . Addition to the pulp; After-treatment of added substances in the pulp
23/06 . . . . . Controlling the addition
23/08 . . . . . by measuring pulp properties, e.g. zeta potential, pH
23/10 . . . . . at least two kinds of compounds being added
23/12 . . . . . by measuring properties of the formed web
23/14 . . . . . by selecting point of addition or time of contact between components
23/16 . . . . . Addition before or during pulp beating or refining (disintegrating fibrous raw materials in mills in the presence of chemical agents D21B 1/16; methods of beating D21D 1/02; methods of refining D21D 1/20)
23/18 . . . . . Addition at a location where shear forces are avoided before sheet-forming, e.g. after pulp beating or refining
23/20 . . . . . Apparatus therefor
23/22 . . . . . Addition to the formed paper
23/24 . . . . . during paper manufacture
23/26 . . . . . by selecting point of addition or moisture content of the paper
23/28 . . . . . Addition before the dryer section, e.g. at the wet end or press section
23/30 . . . . . Pretreatment of the paper (D21H 23/70 D21H 23/76 take precedence)
23/32 . . . . . by contacting paper with an excess of material, e.g. from a reservoir or in a manner necessitating removal of applied excess material from the paper (D21H 23/66 takes precedence; removing excess material D21H 25/08)
23/34 . . . . . Knife or blade type coaters
23/36 . . . . . Knife or blade forming part of the fluid reservoir, e.g. puddle-type trailing blade (or short-dwell coaters)

23/38 . . . . . the fluid material being applied with a special device, e.g. with a roll in a flooded-nip inverted blade coater
23/40 . . . . . only one side of the paper being in contact with the material (D21H 23/34 takes precedence)
23/42 . . . . . Paper being at least partly surrounded by the material on both sides (D21H 23/34 takes precedence)
23/44 . . . . . Treatment with a gas or vapour
23/46 . . . . . Pouring or allowing the fluid to flow in a continuous stream on to the surface, the entire stream being carried away by the paper (D21H 23/66 takes precedence)
23/48 . . . . . Curtain coaters
23/50 . . . . . Spraying or projecting (D21H 23/44, D21H 23/66 take precedence)
23/52 . . . . . by contacting paper with a device carrying the material (D21H 23/32, D21H 23/46, D21H 23/66 take precedence)
23/54 . . . . . Rubbing devices, e.g. brush, pad, felt
23/56 . . . . . Rolls (D21H 23/38 takes precedence)
23/58 . . . . . Details thereof, e.g. surface characteristics, peripheral speed
23/60 . . . . . the material on the applicator roll being subjected to a particular treatment before applying to the paper (D21H 23/64 takes precedence)
23/62 . . . . . Reverse roll coating, i.e. applicator roll surface moving in direction opposite to that of the paper
23/64 . . . . . the material being non-fluent at the moment of transfer, e.g. in form of preformed, at least partially hardened coating
23/66 . . . . . Treating discontinuous paper, e.g. sheets, blanks, rolls
23/68 . . . . . whereby the paper moves continuously
23/70 . . . . . Multistep processes; Apparatus for adding one or several substances in portions or in various ways to the paper, not covered by another single group of this main group
23/72 . . . . . Plural serial stages only
23/74 . . . . . Apparatus permitting switching from one technique to another
23/76 . . . . . characterised by choice of auxiliary compounds which are added separately from at least one other compound, e.g. to improve the incorporation of the latter or to obtain an enhanced combined effect (D21H 17/18, D21H 17/70, D21H 23/10 take precedence)
23/765 . . . . . (Addition of all compounds to the pulp)
23/78 . . . . . Controlling or regulating not limited to any particular process or apparatus

**25/00** After-treatment of paper not provided for in groups D21H 17/00 - D21H 17/00

25/005 . . . . . (Mechanical treatment (D21H 25/08, D21H 25/18 take precedence))
25/02 . . . . . Chemical or biochemical treatment (D21H 25/18 takes precedence)
25/04 . . . . . Physical treatment, e.g. heating, irradiating (D21H 25/18 takes precedence; dryer section of machines for making continuous webs of paper D21F 5/00)
25/06 . . of impregnated or coated paper (D21H 25/08 takes precedence)
25/08 . Rearranging applied substances, e.g. metering, smoothing; Removing excess material
25/10 . . with blades
25/12 . . with an essentially cylindrical body, e.g. roll or rod
25/14 . . the body being a casting drum [a heated roll or a calender]
25/16 . . with a blast of vapour or gas, e.g. air knife
25/18 . . of old paper as in books, documents, e.g. restoring

27/00 Special paper not otherwise provided for, e.g. made by multi-step processes

NOTE
This group provides for the classification of paper with special properties or applications which are only partially or not at all provided for elsewhere in the classification. Whenever possible, however, these papers are classified according to the criteria used in the other groups of this subclass.

27/001 . . [Release paper]
27/002 . . [Tissue paper; Absorbent paper (D21H 21/22, D21H 27/02, D21H 27/20 take precedence; toilet paper A47K 10/00; absorbent pads for physiological fluids A61L 15/16; making on paper-making machines D21F 11/00)]
27/004 . . (characterised by specific parameters (D21H 27/008 takes precedence))
27/005 . . . (relating to physical or mechanical properties, e.g. tensile strength, stretch, softness)
27/007 . . . . (relating to absorbency, e.g. amount or rate of water absorption, optionally in combination with other parameters relating to physical or mechanical properties)
27/008 . . . . (characterised by inhomogeneous distribution or incomplete coverage of properties, e.g. obtained by using materials of chemical compounds (D21H 23/02, D21H 23/76, D21H 27/02 take precedence))
27/02 . Patterned paper (patterned coatings D21H 19/66; embossing B31F 1/07; prepared on the paper-making machines D21F 11/00)
27/04 . . marbled
27/06 . Vegetable or imitation parchment; Glassine paper
27/08 . Filter paper (self-supporting filtering material B01D 39/14; making on paper-making machines D21F 11/14)
27/10 . Packing paper (packaging materials of special type or form B65D 65/38)
27/14 . Paper having stable form or dimension; Curl-resistant paper (anticoil photographic support G03C 1/81)
27/16 . Pure paper, i.e. paper lacking or having low content of contaminants (after-treatment of cellulose pulp D21C 9/00)
27/18 . Paper- or board-based structures for surface covering
27/20 . . Flexible structures being applied by the user, e.g. wallpaper (printed wallapers B44M 3/18; paperhanging B44C 7/00; pregummed wallpaper C09J 7/21)
27/22 . . Structures being applied on the surface by special manufacturing processes, e.g. in presses

27/24 . . . characterised by the surface to be covered being phenolic-resin paper laminates, vulcan fibre or similar cellulosic fibreboards
27/26 . . . characterised by the overlay sheet or the top layers of the structures (decorative panels B44C 5/04; wood grain effects B44F 9/02)
27/28 . . . . treated to obtain specific resistance properties, e.g. against wear or weather (water-repelling agents D21H 21/16)
27/30 . Multi-ply (for surface covering D21H 27/18; making on paper-making machines D21F 9/00, D21F 11/00)

NOTE
Layered products classified in this group are also classified in subclass B32B
27/32 . . with materials applied between the sheets (attaching together paper or cardboard sheets B31F 5/00; adhesives C09J)
27/34 . . . Continuous materials, e.g. filaments, sheets, nets
27/36 . . . . Films made from synthetic macromolecular compounds
27/38 . . at least one of the sheets having a fibrous composition differing from that of other sheets
27/40 . . at least one of the sheets being non-planar, e.g. crêped (créping or corrugating paper B31F)
27/42 . . comprising dry-laid paper