

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING (NOTES omitted)

SHAPING

B32 LAYERED PRODUCTS

B32B LAYERED PRODUCTS, i.e. PRODUCTS BUILT-UP OF STRATA OF FLAT OR NON-FLAT, e.g. CELLULAR OR HONEYCOMB, FORM

NOTES

1. This subclass covers:
 - layered products comprising different kinds of material or layered products not characterised by the particular kind of material used;
 - a product similar to a layered product but comprising only material in the form of a sheet or network embedded in a mass of plastics or of physically-similar substances which mass penetrates the said sheet or network and lies on both sides of the latter (e.g. so that the sheet or network reinforces the plastics substance) PROVIDED THAT the embedded sheet or network extends coherently or connectedly over substantially the whole area of the product; thus the embedded sheet or network may be a fabric or a series of rods connected by cross wires. The manner of making such a product is, however, classified in this subclass only if it is essentially a process of building-up an assembly of layers of which at least one outer layer is preformed. If the embedded material comprises only a series of unconnected rods, the product is not classified in this subclass.
2. This subclass does not cover:
 - processes or apparatus used in, or in connection with, the production or treatment of any product, if the process or apparatus is fully classifiable in a single other class or subclass for processes or apparatus, e.g. [B05](#), [B29](#), [B44D](#), [C08J](#), [C09J](#), [C23](#);
 - compositions or preparation or treatment thereof, unless they are essentially restricted to layered products and cannot be fully classified in another class without ignoring this restriction;
 - etched metallic pattern on the surface of a printed circuit board.
3. In this subclass:
 - a film formed on a layer by spreading a substance thereon is not considered to constitute a layer itself if it serves only as an adhesive or its purpose is merely to finish a surface of a product;
 - groups designating products cover also methods or apparatus specially adapted for producing such products.
4. In this subclass, the following terms or expressions are used with the meanings indicated:
 - "layer" is a sheet or strip or anything else having a small thickness relatively to its other dimensions which, together with at least one other layer, exists in a product, whether it pre-existed, e.g. as a separate sheet or strip, or was formed during the production of the layered product. It may or may not be homogeneous or cohesive; it may be an assembly of fibres or pieces of material. It may be discontinuous, e.g. in the form of a grating, honeycomb, or frame. It may or may not be in complete contact with the next layer, e.g. a corrugated layer against a flat layer;
 - "layered product" comprises at least two layers secured together. The term "secured" includes any method of uniting layers, e.g. needling, stitching, gluing, nailing, dovetailing or the interposition of an adhesive or adhesive impregnated support. It may also be an intermediate stage in the production of an article which is not layered in its final form, e.g. a panel with a protective layer which is stripped off when the panel is placed in its position of use. The layers are preformed layers or layers formed IN SITU on a preformed layer and may consist of coherent solid materials, including honeycombs and other cellular materials or of non-coherent solid materials composed of assemblies of strands, strips, fibres, tiles or the like;
 - "filamentary layer" means a layer of threads or filaments of any substance (e.g. wires) of more or less unlimited length placed in an orderly arrangement and secured together; it may be woven, knitted, braided, or netted, or formed of threads crossed or laid side by side and bonded together;
 - "fibrous layer" means a random assembly of fibres of limited length, e.g. felt, fleece; the fibres {being} interengaged or connected, e.g. by adhesive.
5. In this subclass,
 - The classification of layered products is provided for in many classes, most of which are confined to a particular kind of material. However, in order that this subclass may provide a basis for making a complete search with respect to layered products, all relevant subject matter is classified in this subclass even though it may also be classified in other classes.

WARNING

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[B32B 3/24](#)

covered by

[B32B 3/266](#)

1/00 Layered products having a general shape other than plane**NOTE**

For classification of a product in this group, surface unevennesses or non-uniformities and the shape of individual layers are ignored.

- 1/02 . Receptacles {, i.e. rigid containers}, e.g. tanks
- 1/04 . characterised by feature of form at particular places, e.g. in edge regions {(not used)}
- 1/06 . characterised by fillings or added members in hollow portions {(not used)}
- 1/08 . Tubular products

3/00 Layered products comprising a layer with external or internal discontinuities or unevennesses, or a layer of non-planar form (fibrous or filamentary layer B32B 5/02; particulate layer B32B 5/16; foamed layer B32B 5/18); Layered products having particular features of form (receptacles or tubular products B32B 1/00)

- 3/02 . characterised by features of form at particular places, e.g. in edge regions {(non-uniform thickness B32B 3/263)}
- 3/04 . . characterised by {at least one} layer folded at the edge, e.g. over another layer {; characterised by at least one layer enveloping or enclosing a material}
- 3/06 . . for securing layers together; for attaching the product to another member, e.g. to a support {, or to another product, e.g. groove/tongue, interlocking}
- 3/08 . . characterised by added members at particular parts {(layer formed of separate pieces of material which are juxtaposed side-by-side B32B 3/14, B32B 3/18)}
- 3/085 . . . {spaced apart pieces on the surface of a layer}
- 3/10 . characterised by a discontinuous layer, i.e. formed of separate pieces of material

NOTE

In this group, a series of spaced separate elements forming in effect a broken surface should be regarded as a layer.

- 3/12 . . characterised by a layer of regularly- arranged cells, e.g. a honeycomb structure
- 3/14 . . characterised by a face layer formed of separate pieces of material {which are juxtaposed side-by-side (B32B 5/02 takes precedence)}
- 3/16 . . . secured to a flexible backing
- 3/18 . . characterised by an internal layer formed of separate pieces of material {which are juxtaposed side-by-side (B32B 5/02 takes precedence)}
- 3/20 . . . of hollow pieces, e.g. tubes; of pieces with channels or cavities
- 3/22 . . . of spaced pieces {(not used)}

- 3/26 . characterised by a particular shape of the outline of the cross-section of a continuous layer; characterised by a layer with cavities or internal voids {(foam layer B32B 5/18; layer of synthetic resin characterised by fillers that create voids or cavities B32B 27/205); characterised by an apertured layer}
- 3/263 . . {characterised by a layer having non-uniform thickness}
- 3/266 . . {characterised by an apertured layer, the apertures going through the whole thickness of the layer, e.g. expanded metal, perforated layer, slit layer regular cells B32B 3/12}
- 3/28 . . characterised by a layer comprising a deformed thin sheet {, i.e. the layer having its entire thickness deformed out of the plane}, e.g. corrugated, crumpled (B32B 29/08 takes precedence)
- 3/30 . . characterised by a layer formed with recesses or projections, e.g. {hollows, grooves, protuberances, ribs (apertured layer B32B 3/266; layer with cavities or internal voids B32B 3/26)}

5/00 Layered products characterised by the non-homogeneity or physical structure {, i.e. comprising a fibrous, filamentary, particulate or foam layer; Layered products characterised by having a layer differing constitutionally or physically in different parts}**NOTE**

In this group, fibres, filaments, granules, or powder forming or included in a layer may be impregnated, bonded together, or embedded in a substance such as synthetic resin. If the substance of the fibres, or the like, or the impregnating, bonding, or embedding substance, is important it is classified in the relevant group for the substance.

- 5/02 . characterised by structural features of a {fibrous or filamentary layer (layer formed of metallic wires B32B 15/02; layer formed of natural mineral fibres B32B 19/02; layer formed of wood fibres B32B 21/02; coated or impregnated fibrous or filamentary layer B32B 2255/02 or B32B 2260/021)}

NOTES

1. This group covers, in addition to filamentary and fibrous layers as defined in Note (4) following the title of this subclass, layers of substances having an intrinsic fibrous nature (e.g. paper, wood), if the fibrous nature is important and the particular substance is not important.
2. {When classifying in group B32B 5/02, the chemical composition of the fibres is further classified by using the indexing codes B32B 2262/00 - B32B 2262/14, whenever appropriate.}

- 5/022 . . {Non-woven fabric}
- 5/024 . . {Woven fabric}
- 5/026 . . {Knitted fabric}

- 5/028 . . {Net structure, e.g. spaced apart filaments bonded at the crossing points}
- 5/04 . . characterised by a layer being specifically extensible by reason of its structure or arrangement {, e.g. by reason of the chemical nature of the fibres or filaments}
- 5/06 . . characterised by a fibrous {or filamentary} layer {mechanically connected, e.g. by needling, sewing, stitching, hydroentangling, hook and loop-type fasteners} to another layer, e.g. of fibres, of paper
- 5/08 . . the fibres or filaments of a layer being of different substances {, e.g. conjugate fibres, mixture of different fibres}
- 5/10 . . characterised by a fibrous {or filamentary} layer reinforced with filaments
- 5/12 . . characterised by the relative arrangement of fibres or filaments of {different layers, e.g. the fibres or filaments being parallel or perpendicular to each other}
- 5/14 . characterised by a layer differing constitutionally or physically in different parts, e.g. denser near its faces
- 5/142 . . {Variation across the area of the layer}
- 5/145 . . {Variation across the thickness of the layer}
- 5/147 . . {by treatment of the layer}
- 5/16 . characterised by features of a layer formed of particles, e.g. chips, powder {, granules (B32B 21/02 takes precedence; layers formed of natural mineral particles B32B 19/00; coated or impregnated particulate layers B32B 2255/04 or B32B 2260/025)}
- 5/18 . characterised by features of a layer {of} foamed material
- 5/20 . . foamed in situ
- 5/22 . characterised by the presence of two or more layers which {are next to each other and are fibrous, filamentary, formed of particles or foamed (B32B 19/06, B32B 19/048 B32B 19/047, B32B 29/005 - B32B 29/04 take precedence)}
- 5/24 . . one layer being a fibrous or filamentary layer
- 5/245 . . . {another layer next to it being a foam layer}
- 5/26 . . . another layer {next to it also being fibrous or filamentary (relative arrangement of fibres or filaments of different layers B32B 5/12; all layers being fibrous or filamentary B32B 2250/20; two or more impregnated fibrous or filamentary layers B32B 2260/023)}
- 5/28 . . . impregnated with or embedded in a plastic substance {(not used)}
- 5/30 . . one layer {being formed of particles, e.g. chips,} granules, powder
- 5/32 . . {at least two layers being foamed and next to each other (all layers being foamed B32B 2250/22)}
- 7/00 Layered products characterised by the relation between layers; Layered products characterised by the relative orientation of features between layers, or by the relative values of a measurable parameter between layers, i.e. products comprising layers having different physical, chemical or physicochemical properties; Layered products characterised by the interconnection of layers**
- 7/02 . Physical, chemical or physicochemical properties
- WARNING**
- Group [B32B 7/02](#) is impacted by reclassification into groups [B32B 7/022](#), [B32B 7/023](#), [B32B 7/025](#), [B32B 7/027](#), and [B32B 7/028](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 7/022 . . Mechanical properties
- WARNING**
- Groups [B32B 7/022](#), [B32B 7/023](#), [B32B 7/025](#), [B32B 7/027](#), and [B32B 7/028](#) are incomplete pending reclassification of documents from group [B32B 7/02](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 7/023 . . Optical properties
- 7/025 . . Electric or magnetic properties
- 7/027 . . Thermal properties
- 7/028 . . . Heat-shrinkability
- 7/03 . with respect to the orientation of features (direction of fibres or filaments [B32B 5/12](#))
- WARNING**
- Group [B32B 7/03](#) is impacted by reclassification into group [B32B 7/035](#).
- Groups [B32B 7/03](#) and [B32B 7/035](#) should be considered in order to perform a complete search.
- 7/035 . . using arrangements of stretched films, e.g. of mono-axially stretched films arranged alternately
- WARNING**
- Group [B32B 7/035](#) is incomplete pending reclassification of documents from group [B32B 7/03](#).
- Groups [B32B 7/03](#) and [B32B 7/035](#) should be considered in order to perform a complete search.
- 7/04 . Interconnection of layers
- 7/05 . . the layers not being connected over the whole surface, e.g. discontinuous connection or patterned connection (using interposed adhesives or bonding materials applied in spaced arrangements [B32B 7/14](#))
- 7/06 . . permitting easy separation
- 7/08 . . by mechanical means
- WARNING**
- Group [B32B 7/08](#) is impacted by reclassification into group [B32B 7/09](#).
- Groups [B32B 7/08](#) and [B32B 7/09](#) should be considered in order to perform a complete search.

- 7/09 . . . by stitching, needling or sewing (by needling fibrous layers [B32B 5/06](#))

WARNING

Group [B32B 7/09](#) is incomplete pending reclassification of documents from group [B32B 7/08](#).

Groups [B32B 7/08](#) and [B32B 7/09](#) should be considered in order to perform a complete search.

- 7/10 . . at least one layer having inter-reactive properties
 7/12 . . using interposed adhesives or interposed materials with bonding properties
 7/14 . . . applied in spaced arrangements, e.g. in stripes

Layered products characterised by particular substances used**NOTE**

In groups [B32B 9/00](#) - [B32B 29/00](#), the following expressions are used with the meanings indicated:

- "specific substance" covers specified alternative substances if they are all covered by a single main group;
- "particulate layer" means a layer of particles, e.g. chips, chopped fibres, powder;
- {"essentially" means that if an alteration or removal of such a layer occurred it would alter the scope of the invention}

9/00 Layered products comprising a particular substance not covered by groups [B32B 11/00](#) - [B32B 29/00](#)

- 9/002 . {comprising natural stone or artificial stone}
 9/005 . {comprising one layer of ceramic material, e.g. porcelain, ceramic tile (layered products with at least two ceramic layers composed mainly of ceramic [B32B 18/00](#))}
 9/007 . . {comprising carbon, e.g. graphite, composite carbon}
 9/02 . comprising animal or vegetable substances {, e.g. cork, bamboo, starch}
 9/025 . . {comprising leather}
 9/04 . comprising such {particular substance as the main or only constituent of a layer, which is next to another layer of the same or of a different material ([B32B 17/06](#) takes precedence; layered products with at least two ceramic layers composed mainly of ceramic [B32B 18/00](#))}
 9/041 . . {of metal}
 9/042 . . {of wood}
 9/043 . . {of natural rubber or synthetic rubber}
 9/045 . . {of synthetic resin}
 9/046 . . {of foam}
 9/047 . . {made of fibres or filaments}
 9/048 . . {made of particles}
 9/06 . . of paper or cardboard

11/00 Layered products comprising {a layer of} bituminous or tarry substances

- 11/02 . with fibres or particles {being present as additives in the layer}
 11/04 . comprising such {bituminous or tarry substance as the main or only constituent of a layer, which is next to another layer of the same or of a different material ([B32B 17/06](#) takes precedence)}
 11/042 . . {of wood}
 11/044 . . {of natural rubber or synthetic rubber}

- 11/046 . . {of synthetic resin}
 11/048 . . {of foam}
 11/06 . . of paper or cardboard
 11/08 . . of metal
 11/10 . next to a fibrous or filamentary layer
 11/12 . next to a particulate layer

13/00 Layered products comprising a {a layer of} water-setting substance, e.g. concrete, plaster, asbestos cement, or like builders' material

- 13/02 . with fibres or particles {being present as additives in the layer}
 13/04 . comprising such {water setting substance as the main or only constituent of a layer, which is next to another layer of the same or of a different material ([B32B 17/06](#) takes precedence)}
 13/042 . . {of natural rubber or synthetic rubber}
 13/045 . . {of foam}
 13/047 . . {made of particles}
 13/06 . . of metal
 13/08 . . of paper or cardboard
 13/10 . . of wood; of wood particle board
 13/12 . . of synthetic resin
 13/14 . next to a fibrous or filamentary layer

15/00 Layered products comprising {a layer of} metal

- 15/01 . all layers being exclusively metallic {(making layered metal workpieces by pressure cladding [B23K 20/22](#); making coatings with a metallic material characterised by its composition [C23C 30/00](#))}
 15/011 . . {all layers being formed of iron alloys or steels}
 15/012 . . {one layer being formed of an iron alloy or steel, another layer being formed of aluminium or an aluminium alloy}
 15/013 . . {one layer being formed of an iron alloy or steel, another layer being formed of a metal other than iron or aluminium}
 15/015 . . . {the said other metal being copper or nickel or an alloy thereof}
 15/016 . . {all layers being formed of aluminium or aluminium alloys}
 15/017 . . {one layer being formed of aluminium or an aluminium alloy, another layer being formed of an alloy based on a non ferrous metal other than aluminium}
 15/018 . . {one layer being formed of a noble metal or a noble metal alloy}
 15/02 . {Layer formed of wires, e.g. mesh}
 15/04 . comprising metal as the main or only constituent of a layer, {which is next to another layer of the same or of a different material ([B32B 17/061](#) and [B32B 23/042](#) take precedence; next to a bituminous or tarry layer [B32B 11/08](#); next to a water-setting substance layer [B32B 13/06](#))}
 15/043 . . {of metal ([B32B 15/01](#) takes precedence)}
 15/046 . . {of foam}
 15/06 . . of {natural rubber or synthetic} rubber
 15/08 . . of synthetic resin
 15/082 . . . comprising vinyl resins; comprising acrylic resins
 15/085 . . . comprising polyolefins
 15/088 . . . comprising polyamides
 15/09 . . . comprising polyesters

- 15/092 . . . comprising epoxy resins
- 15/095 . . . comprising polyurethanes
- 15/098 . . . comprising condensation resins of aldehydes, e.g. with phenols, ureas or melamines
- 15/10 . . of wood
- 15/12 . . of paper or cardboard
- 15/14 . next to a fibrous or filamentary layer
- 15/16 . next to a particulate layer
- 15/18 . comprising iron or steel {[\(B32B 15/011, B32B 15/012 and B32B 15/013 take precedence\)](#)}
- 15/20 . comprising aluminium or copper {[\(B32B 15/016 and B32B 15/017 take precedence\)](#)}
- 17/00 Layered products essentially comprising sheet glass, or glass, slag, or like fibres**
- 17/02 . in the form of fibres or filaments
- 17/04 . . bonded with or embedded in a plastic substance
- 17/06 . comprising glass as the main or only constituent of a layer, next to another layer of a specific {material (coating on glass [C03C 17/00](#); safety glazings [B32B 17/08](#) or [B32B 17/10](#); fire protective glazing with intumescent layers [B32B 17/069](#))}
- 17/061 . . {metal}
- 17/062 . . {wood}
- 17/063 . . {rubber}
- 17/064 . . {synthetic resin ([B32B 17/10 takes precedence](#))}
- 17/065 . . {paper or cardboard}
- 17/066 . . {foam}
- 17/067 . . {fibres or filaments}
- 17/068 . . {particulate matter}
- 17/069 . . {intumescent layers ([B32B 17/10311 takes precedence](#))}
- 17/08 . . of cellulosic plastic substance {or gelatin}
- 17/10 . . of synthetic resin {(producing optical elements from plastics [B29D 11/00](#); constructional form of optical elements [G02B](#))}
- NOTES**
1. In this group a layer of organic glass is not considered as a glass layer but as a synthetic resin layer;
 2. [N: Inventions related to safety glazings (laminated glazings) are classified in all appropriate subgroups [B32B 17/10009 - B32B 17/10807](#), whereby transparent polymeric layers other than the interlayer ([B32B 17/1055](#)) are classified using indexing codes
- 17/10009 . . . {characterized by the number, the constitution or treatment of glass sheets}
- 17/10018 {comprising only one glass sheet}
- 17/10027 {the glass sheet not being an outer layer}
- 17/10036 {comprising two outer glass sheet}
- 17/10045 {at least one intermediate layer consisting of a glass sheet}
- 17/10055 {at least one intermediate air space ([IG window units comprising two or more parallel glass panes E06B 3/66](#))}
- 17/10064 {comprising at least two glass sheets, only one of which being an outer layer}
- 17/10073 {comprising at least two glass sheets, neither of which being an outer layer}
- 17/10082 {Properties of the bulk of a glass sheet}
- 17/10091 {thermally hardened ([chemical strengthening B32B 17/10137](#))}
- 17/101 {having a predetermined coefficient of thermal expansion [CTE]}
- 17/1011 {having predetermined tint or excitation purity}
- 17/10119 {having a composition deviating from the basic composition of soda-lime glass, e.g. borosilicate}
- 17/10128 {Treatment of at least one glass sheet ([cutting of laminated glass C03B 33/076](#))}
- 17/10137 {Chemical strengthening}
- 17/10146 {Face treatment, e.g. etching, grinding or sand blasting}
- 17/10155 {Edge treatment, chamfering}
- 17/10165 . . . {particular functional features of the laminated glazing}
- 17/10174 {Coatings of a metallic or dielectric material on a constituent layer of glass or polymer}
- 17/10183 {being not continuous, e.g. in edge regions}
- 17/10192 {patterned in the form of columns or grids}
- 17/10201 {Dielectric coatings}
- 17/10211 {Doped dielectric layer, electrically conductive, e.g. $\text{SnO}_2\text{:F}$ }
- 17/1022 {Metallic coatings}
- 17/10229 {Metallic layers sandwiched by dielectric layers}
- 17/10238 {in the form of particles}
- 17/10247 {containing decorations or patterns for aesthetic reasons; metal wires for this purpose [B32B 17/10422](#)}
- 17/10256 {created by printing techniques}
- 17/10266 {on glass pane}
- 17/10275 {on interlayer}
- 17/10284 {on intermediate layer}
- 17/10293 {Edge features, e.g. inserts or holes}
- 17/10302 {Edge sealing}
- 17/10311 {Intumescent layers for fire protection}
- 17/10321 {containing liquid layers}
- 17/1033 {containing temporary protective coatings or layers}
- 17/10339 {Specific parts of the laminated glazing being colored or tinted ([tinted glass B32B 17/1011](#); [tinted interlayer B32B 17/10651](#))}
- 17/10348 {comprising an obscuration band}
- 17/10357 {comprising a tinted intermediate film}
- 17/10366 {Reinforcements of the laminated glazing against impact or intrusion; metal wires for this purpose [B32B 17/10412](#)}
- 17/10376 {containing metal wires}
- 17/10385 {for Ohmic resistance heating ([Ohmic resistance heating in general H05B 3/84](#))}
- 17/10394 {Alarm wires ([burglar alarms by breaking glass G08B 13/04](#))}
- 17/10403 {for radiation shielding ([radiation shielding in general H05K 9/00](#))}
- 17/10412 {for reinforcement}
- 17/10422 {for aesthetic reasons}

- 17/10431 {Devices for the modulation of light incorporated into the laminated glazing (metallic or dielectric coatings [B32B 17/10174](#); coating on glass in general [C03C 17/00](#))}
- 17/1044 {Invariable transmission}
- 17/10449 {Wavelength selective transmission (filters [per se G02B 5/20](#))}
- 17/10458 {Polarization selective transmission (polarizing elements [per se G02B 5/30](#))}
- 17/10467 {Variable transmission}
- 17/10477 {thermochromic}
- 17/10486 {photochromic}
- 17/10495 {optoelectronic, i.e. optical valve}
- 17/10504 {liquid crystal layer (devices for the control of the intensity of the light based on liquid crystals [G02F 1/13](#))}
- 17/10513 {electrochromic layer (devices for the control of the intensity of the light based on electrochromic elements [G02F 1/15](#))}
- 17/10522 {electrophoretic layer (devices for the control of the intensity of the light based on electrophoresis [G02F 1/167](#))}
- 17/10532 {suspended particle layer (devices for the control of the intensity of the light based on suspension of oriented dipolar particles [G02F 1/172](#))}
- 17/10541 {the laminated glazing acting as an illumination device, i.e. comprising a light source or a light guide (lighting devices for vehicle interior [B60Q 3/20](#); structural combinations of lighting devices with other articles [F21V 33/00](#); light guides in general [G02B 6/00](#))}
- 17/1055 . . . {characterized by the resin layer, i.e. interlayer}
- 17/10559 {Shape of the cross-section}
- 17/10568 {varying in thickness}
- 17/10577 {Surface roughness}
- 17/10587 {created by embossing}
- 17/10596 {created by melt fracture}
- 17/10605 {Type of plasticizer}
- 17/10614 {comprising particulate matter for purposes other than dyeing}
- 17/10623 {Whitening agents reflecting visible light}
- 17/10633 {Infrared radiation absorbing or reflecting agents}
- 17/10642 {Thermally conductive agents}
- 17/10651 {comprising colorants, e.g. dyes or pigments}
- 17/1066 {imparting a tint in certain regions only, i.e. shade band}
- 17/10669 {Luminescent agents (luminescent materials [C09K 11/00](#), optical brightening agents [C08K 5/0041](#))}
- 17/10678 {comprising UV absorbers or stabilizers, e.g. antioxidants}
- 17/10688 {Adjustment of the adherence to the glass layers}
- 17/10697 {being cross-linked}
- 17/10706 {being photo-polymerized}
- 17/10715 {containing polyether}
- 17/10724 {containing polyamide}
- 17/10733 {containing epoxy}
- 17/10743 {containing acrylate (co)polymers or salts thereof}
- 17/10752 {containing polycarbonate}
- 17/10761 {containing vinyl acetal}
- 17/1077 {containing polyurethane}
- 17/10779 {containing polyester}
- 17/10788 {containing ethylene vinylacetate}
- 17/10798 {containing silicone}
- 17/10807 . . . {Making layered products containing glass and synthetic resin layers; apparatus therefor}
- 17/10816 {by pressing}
- 17/10825 {isostatic pressing, i.e. using non rigid pressure-exerting members against rigid parts (isostatic presses in general [B30B 11/001](#))}
- 17/10834 {using a fluid}
- 17/10844 {using a membrane between the layered product and the fluid}
- 17/10853 {the membrane being bag-shaped}
- 17/10862 {using pressing-rolls}
- 17/10871 {in combination with particular heat treatment}
- 17/1088 {by superposing a plurality of layered products}
- 17/10889 {shaping the sheets, e.g. by using a mould ([B32B 17/10816](#) takes precedence)}
- 17/10899 {by introducing interlayers of synthetic resin}
- 17/10908 {in liquid form}
- 17/10917 {between two pre-positioned glass layers (spacing elements for window units comprising two or more parallel panes [E06B 3/663](#))}
- 17/10926 {by spraying ([spraying in general B05](#))}
- 17/10935 {as a preformed layer, e.g. formed by extrusion}
- 17/10944 {in powder form}
- 17/10954 {by using an aligning laminating device}
- 17/10963 {specially adapted for repairing the layered products}
- 17/10972 {Degassing during the lamination ([B32B 17/10816](#) takes precedence; during molding [B29C 37/006](#))}
- 17/10981 {Pre-treatment of the layers}
- 17/1099 {After-treatment of the layered product, e.g. cooling}
- 18/00 Layered products essentially comprising ceramics, e.g. refractory products**
- NOTE**
- In group [B32B 18/00](#), from 01-10-2008 onwards, features relating to interlayers, additional compositional information or further processing are indexed with codes chosen from [C04B 2237/00](#) - [C04B 2237/88](#)
- 19/00 Layered products comprising {a layer of} natural mineral fibres or particles, e.g. asbestos, mica**
- 19/02 . {the layer of fibres or particles being impregnated or} embedded in a plastic substance
- 19/04 . next to another layer {of the same or of a different material ([B32B 17/067](#) takes precedence)}
- 19/041 . . {of metal}

- 19/042 . . {of wood}
- 19/043 . . {of natural rubber or synthetic rubber}
- 19/045 . . {of synthetic resin}
- 19/046 . . {of paper or cardboard}
- 19/047 . . {of foam}
- 19/048 . . {made of particles}
- 19/06 . next to a fibrous or filamentary layer
- 19/08 . comprising asbestos
- 21/00 Layered products comprising {a layer of} wood, e.g. wood board, veneer, wood particle board**
- 21/02 . {the layer being formed} of fibres, chips, or particles {, e.g. MDF, HDF, OSB, chipboard, particle board, hardboard}
- 21/04 . comprising wood as the main or only constituent of a layer {, which is next to another layer of the same or of a different material ([B32B 17/062](#) and [B32B 23/044](#) take precedence; next to a layer of a particular substance [B32B 9/042](#); next to a bituminous or tarry layer [B32B 11/042](#); next to a water setting substance layer [B32B 13/10](#); next to a metal layer [B32B 15/10](#); next to a layer formed of natural mineral fibres or particles [B32B 19/042](#))}
- 21/042 . . {of wood ([B32B 21/13](#) takes precedence)}
- 21/045 . . {of natural rubber or synthetic rubber}
- 21/047 . . {of foam}
- 21/06 . . of paper or cardboard
- 21/08 . . of synthetic resin
- 21/10 . Next to a fibrous or filamentary layer
- 21/12 . next to a particulate layer
- 21/13 . all layers being exclusively wood
- 21/14 . comprising wood board or veneer
- 23/00 Layered products comprising {a layer of} cellulosic plastic substances {, i.e. substances obtained by chemical modification of cellulose, e.g. cellulose ethers, cellulose esters, viscose}**
- 23/02 . in the form of fibres or filaments {(not used)}
- 23/04 . comprising such {cellulosic plastic substance as the main or only constituent of a layer, which is next to another layer of the same or of a different material ([B32B 17/08](#) takes precedence)}
- 23/042 . . {of metal}
- 23/044 . . {of wood}
- 23/046 . . {of natural rubber or synthetic rubber (all layers being polymeric [B32B 2250/24](#))}
- 23/048 . . {of foam}
- 23/06 . . of paper or cardboard
- 23/08 . . of synthetic resin {(all layers being polymeric [B32B 2250/24](#))}
- 23/10 . next to a fibrous or filamentary layer
- 23/12 . next to a particulate layer
- 23/14 . characterised by containing special compounding ingredients
- 23/16 . . Modifying agents
- 23/18 . . Fillers
- 23/20 . comprising esters
- 23/22 . comprising ethers
- 25/00 Layered products comprising {a layer of} natural or synthetic rubber {(B32B 5/02, B32B 5/16, B32B 5/18 take precedence; thermoplastic elastomer [B32B 2274/00](#))}**
- 25/02 . with fibres or particles {being present as additives in the layer}
- 25/04 . comprising rubber as the main or only constituent of a layer, {which is next to another layer of the same or of a different material ([B32B 17/063](#) takes precedence; next to a layer of a particular substance [B32B 9/043](#); next to a bituminous or tarry layer [B32B 11/044](#); next to a water setting substance layer [B32B 13/042](#); next to a metal layer [B32B 15/06](#); next to a layer formed of natural mineral fibres or particles [B32B 19/043](#); next to a wood layer [B32B 21/045](#); next to a cellulosic plastic layer [B32B 23/046](#))}
- 25/042 . . {of natural rubber or synthetic rubber (all layers being made of natural or synthetic rubber [B32B 2250/248](#))}
- 25/045 . . {of foam}
- 25/047 . . {of particles}
- 25/06 . . of paper or cardboard
- 25/08 . . of synthetic resin {(all layers being polymeric [B32B 2250/24](#))}
- 25/10 . next to a fibrous or filamentary layer
- 25/12 . comprising natural rubber
- 25/14 . comprising {synthetic rubber copolymers ([B32B 25/18](#) and [B32B 25/20](#) take precedence)}
- 25/16 . comprising polydienes {homopolymers} or polyhalodienes {homopolymers ([B32B 25/12](#) takes precedence)}
- 25/18 . comprising butyl or halobutyl rubber
- 25/20 . comprising silicone rubber
- 27/00 Layered products comprising {a layer of} synthetic resin {(B32B 5/02, B32B 5/16, B32B 5/18 take precedence; thermoplastic elastomer [B32B 2274/00](#))}**
- NOTE**
- This group covers all synthetic resins except those covered by [B32B 25/00](#) or [B32B 23/00](#)
- 27/02 . in the form of fibres or filaments {(not used)}
- 27/04 . as impregnant, bonding, or embedding substance {(not used)}
- 27/06 . as the main or only constituent of a layer, {which is next to another layer of the same or of a different material ([B32B 17/064](#) takes precedence; next to a layer of a particular substance [B32B 9/045](#); next to a bituminous or tarry layer [B32B 11/046](#); next to a water setting substance layer [B32B 13/12](#); next to a metal layer [B32B 15/08](#); next to a layer formed of natural mineral fibres or particles [B32B 19/045](#); next to a wood layer [B32B 21/08](#); next to a cellulosic plastic layer [B32B 23/08](#); next to a natural or synthetic rubber layer [B32B 25/08](#))}
- 27/065 . . {of foam}
- 27/08 . . of synthetic resin {(all layers being polymeric, made of polymers belonging to those covered by [B32B 27/32](#), by [B32B 27/36](#), or by [B32B 27/30](#) and [B32B 27/32](#), [B32B 2250/24](#) - [B32B 2250/246](#))}
- 27/10 . . of paper or cardboard
- 27/12 . next to a fibrous or filamentary layer
- 27/14 . next to a particulate layer
- 27/16 . specially treated, e.g. irradiated {(B32B 2255/10 takes precedence)}
- 27/18 . characterised by the use of special additives
- 27/20 . . using fillers, pigments, thixotroping agents

- 27/205 . . . {the fillers creating voids or cavities, e.g. by stretching}
- 27/22 . . using plasticisers
- 27/24 . . using solvents or swelling agents
- 27/26 . . using curing agents
- 27/28 . comprising synthetic resins not wholly covered by any one of the sub-groups {[B32B 27/30](#) - [B32B 27/42](#)}
- 27/281 . . {comprising polyimides}
- 27/283 . . {comprising polysiloxanes}
- 27/285 . . {comprising polyethers}
- 27/286 . . {comprising polysulphones; polysulfides}
- 27/288 . . {comprising polyketones}
- 27/30 . comprising vinyl {(co)polymers; comprising acrylic (co)polymers}
- 27/302 . . {comprising aromatic vinyl (co)polymers, e.g. styrenic (co)polymers}
- 27/304 . . {comprising vinyl halide (co)polymers, e.g. PVC, PVDC, PVF, PVDF}
- 27/306 . . {comprising vinyl acetate or vinyl alcohol (co)polymers}
- 27/308 . . {comprising acrylic (co)polymers}
- 27/32 . comprising polyolefins {(B32B 27/30 takes precedence)}
- 27/322 . . {comprising halogenated polyolefins, e.g. PTFE}
- 27/325 . . {comprising polycycloolefins}
- 27/327 . . {comprising polyolefins obtained by a metallocene or single-site catalyst}
- 27/34 . comprising polyamides
- 27/36 . comprising polyesters
- 27/365 . . {comprising polycarbonates}
- 27/38 . comprising epoxy resins
- 27/40 . comprising polyurethanes
- 27/42 . comprising condensation resins of aldehydes, e.g. with phenols, ureas or melamines
- 29/00 Layered products comprising {a layer of} paper or cardboard**
- 29/002 . {as the main or only constituent of a layer, which is next to another layer of the same or of a different material ([B32B 17/065](#) takes precedence; next to a layer of a particular substance [B32B 9/06](#); next to a bituminous or tarry layer [B32B 11/06](#); next to a water-setting substance layer [B32B 13/08](#); next to a metal layer [B32B 15/12](#); next to a layer formed of natural mineral fibres or particles [B32B 19/046](#); next to a wood layer [B32B 21/06](#); next to a cellulosic plastic layer [B32B 23/06](#); next to a natural or synthetic rubber layer [B32B 25/06](#); next to a synthetic resin layer [B32B 27/10](#))}
- 29/005 . . {next to another layer of paper or cardboard layer (all layers being made of paper or paperboard [B32B 2250/26](#))}
- 29/007 . . {next to a foam layer}
- 29/02 . next to a fibrous or filamentary layer
- 29/04 . next to a particulate layer
- 29/06 . specially treated, e.g. surfaced, parchmented {([B32B 2255/12](#), [B32B 2260/028](#) take precedence)}
- 29/08 . Corrugated paper or cardboard

33/00 Layered products characterised by particular properties or particular surface features, e.g. particular surface coatings; Layered products designed for particular purposes not covered by another single class

Methods or apparatus for making layered products; Treatment of the layers or of the layered products

NOTE

In groups [B32B 37/00](#) { , [B32B 38/00](#), [B32B 41/00](#) } and [B32B 39/00](#), the following expressions are used with the meaning indicated:

- {"lay-up" is considered to be the action of combining separate layers, one on top of the other, in order to form a half-product for entering the laminating process}
- "laminating" means the action of combining previously unconnected {but possibly laid up} layers to become one product whose layers will remain together;
- "partial laminating" occurs when one layer does not fully cover a surface of another layer, whereby the layer with the greater surface area is laminated on only part of its surface;
- "adhesive" means a layer, or part of a layer, applied in any state or in any manner which is incorporated for the purpose of bonding.

37/00 Methods or apparatus for laminating, e.g. by curing or by ultrasonic bonding

- 37/0007 . {involving treatment or provisions in order to avoid deformation or air inclusion, e.g. to improve surface quality}
- 37/0015 . . {to avoid warp or curl}
- 37/0023 . . {around holes, apertures or channels present in at least one layer}
- 37/003 . . {to avoid air inclusion}
- 37/0038 . {involving application of liquid to the layers prior to lamination, e.g. wet laminating ([B32B 37/12](#) takes precedence)}
- 37/0046 . {characterised by constructional aspects of the apparatus}
- 37/0053 . . {Constructional details of laminating machines comprising rollers; Constructional features of the rollers}
- 2037/0061 . . {the apparatus being an office laminator}
- 2037/0069 . . {the apparatus being originally designed for another function, e.g. printer, photocopier}
- 37/0076 . {characterised in that the layers are not bonded on the totality of their surfaces}
- 37/0084 . . {Point bonding}
- 2037/0092 . {in which absence of adhesives is explicitly presented as an advantage}
- 37/02 . characterised by a sequence of laminating steps, e.g. by adding new layers at consecutive laminating stations
- 37/025 . . {Transfer laminating}
- 37/04 . characterised by the partial melting of at least one layer
- 37/06 . characterised by the heating method
- 37/065 . . {resulting in the laminate being partially bonded ([B32B 37/0076](#) takes precedence)}
- 37/08 . characterised by the cooling method
- 37/085 . . {Quenching}
- 37/10 . characterised by the pressing technique, e.g. using action of vacuum or fluid pressure
- 37/1009 . . {using vacuum and fluid pressure}

- 37/1018 . . {using only vacuum}
- 37/1027 . . {Pressing using at least one press band}
- 37/1036 . . . {Pressing between one press band and a cylinder}
- 37/1045 . . {Intermittent pressing, e.g. by oscillating or reciprocating motion of the pressing means ([B32B 37/0076](#) takes precedence)}
- 37/1054 . . {Regulating the dimensions of the laminate, e.g. by adjusting the nip or platen gap}
- 2037/1063 . . {using an electrostatic force}
- 2037/1072 . . {using a fluid jet}
- 2037/1081 . . {using a magnetic force}
- 2037/109 . . {using a squeegee}
- 37/12 . characterised by using adhesives
- 37/1207 . . {Heat-activated adhesive ([B32B 37/04](#) takes precedence)}
- 2037/1215 . . . {Hot-melt adhesive}
- 2037/1223 {film-shaped}
- 2037/123 {net-shaped}
- 2037/1238 . . . {in the form of powder}
- 2037/1253 . . {curable adhesive}
- 2037/1261 . . . {moisture curable}
- 2037/1269 . . {multi-component adhesive}
- 2037/1276 . . {water-based adhesive}
- 37/1284 . . {Application of adhesive}
- 37/1292 . . . {selectively, e.g. in stripes, in patterns ([B32B 37/0076](#) takes precedence)}
- 37/14 . characterised by the properties of the layers
- 37/142 . . {Laminating of sheets, panels or inserts, e.g. stiffeners, by wrapping in at least one outer layer, or inserting into a preformed pocket}
- 37/144 . . {using layers with different mechanical or chemical conditions or properties, e.g. layers with different thermal shrinkage, layers under tension during bonding ([constructional features for tensioning B32B 38/1825](#) takes precedence)}
- 37/146 . . {whereby one or more of the layers is a honeycomb structure}
- 2037/148 . . {whereby layers material is selected in order to facilitate recycling of the laminate}
- 37/15 . . with at least one layer being manufactured and immediately laminated before reaching its stable state, e.g. in which a layer is extruded and laminated while in semi-molten state
- 37/153 . . . {at least one layer is extruded and immediately laminated while in semi-molten state}
- 37/156 . . . {at least one layer is calendered and immediately laminated}
- 37/16 . . with all layers existing as coherent layers before laminating
- 37/18 . . . involving the assembly of discrete sheets or panels only
- 37/182 {one or more of the layers being plastic}
- 37/185 {Laminating sheets, panels or inserts between two discrete plastic layers}
- 37/187 {the layers being placed in a carrier before going through the lamination process}
- 37/20 . . . involving the assembly of continuous webs only
- 37/203 {One or more of the layers being plastic}
- 37/206 {Laminating a continuous layer between two continuous plastic layers}
- 37/22 . . . involving the assembly of both discrete and continuous layers
- 37/223 {One or more of the layers being plastic}
- 37/226 {Laminating sheets, panels or inserts between two continuous plastic layers}
- 37/24 . . with at least one layer not being coherent before laminating, e.g. made up from granular material sprinkled onto a substrate ([B32B 37/15](#) takes precedence)
- 2037/243 . . . {Coating}
- 2037/246 . . . {Vapour deposition}
- 37/26 . . with at least one layer which influences the bonding during the lamination process, e.g. release layers or pressure equalising layers
- 2037/262 . . . {Partition plates or sheets for separating several laminates pressed simultaneously}
- 2037/264 . . . {Pressure equalizing layers}
- 2037/266 . . . {Cushioning layers}
- 2037/268 . . . {Release layers}
- 37/28 . involving assembly of non-flat intermediate products which are flattened at a later step, e.g. tubes
- 37/30 . Partial laminating
- 38/00 Ancillary operations in connection with laminating processes**
- NOTE**
- {In this group, the following expression is used with the meaning indicated:
 - "in connection with laminating processes" means ancillary operations are carried out either
 - a. as steps of the lamination processes, or
 - b. in line with the lamination processes, just before or immediately after.}
- 38/0004 . {Cutting, tearing or severing, e.g. bursting; Cutter details (cutting in general [B26D](#); laminating combined with punching or perforating [B32B 38/04](#); removing all or part of the layers [B32B 38/10](#); cutting in combination with laying up and registration [B32B 38/185](#) takes precedence)}
- 38/0008 . {Electrical discharge treatment, e.g. corona, plasma treatment; wave energy or particle radiation ([B32B 38/0036](#) and [B29C 59/00](#) take precedence)}
- NOTE**
- Laminate treatment is further indexed in group [B32B 2310/00](#)
- 38/0012 . {Mechanical treatment, e.g. roughening, deforming, stretching}
- NOTE**
- When classifying in group [B32B 38/0012](#), the treatment can be further classified into indexing codes chosen from [B32B 2038/0016-B32B 2038/0028](#)
- 2038/0016 . . {Abrading}
- 2038/002 . . {Sandblasting}
- 2038/0024 . . {Crushing}
- 2038/0028 . . {Stretching, elongating}
- 38/0032 . {increasing porosity ([B32B 38/04](#) takes precedence)}

38/0036	. {Heat treatment (for heating or cooling of layers during lamination B32B 37/06 , B32B 37/08)}	38/185	. . . . . {combined with the cutting of one or more layers}
	NOTE	38/1858	. . {using vacuum}
	When classifying in group B32B 38/0036 , the heat treatment can be further indexed by using the indexing codes chosen from B32B 38/0036 and subgroups	38/1866	. . {conforming the layers or laminate to a convex or concave profile}
38/004	. . {by physically contacting the layers, e.g. by the use of heated platens or rollers}	38/1875	. . {Tensioning}
2038/0044	. . {for creating local stresses}	38/1883	. . {Detensioning}
2038/0048	. . {Annealing, relaxing}	2038/1891	. . {Using a robot for handling the layers}
2038/0052	. {Other operations not otherwise provided for}	39/00	Layout of apparatus or plants, e.g. modular laminating systems
2038/0056	. . {Moistening}	41/00	Arrangements for controlling or monitoring lamination processes; Safety arrangements
2038/006	. . {Relieving internal or residual stresses}	41/02	. Safety arrangements
2038/0064	. . {Smoothing, polishing, making a glossy surface}	2041/04	. {Detecting wrong registration, misalignment, deviation, failure}
2038/0068	. . {Changing crystal orientation}	2041/06	. {Starting the lamination machine or method}
2038/0072	. . {Orienting fibers}	43/00	Operations specially adapted for layered products and not otherwise provided for, e.g. repairing; Apparatus therefor
2038/0076	. . {Curing, vulcanising, cross-linking}	43/003	. {Cutting}
2038/008	. . {Sewing, stitching}	43/006	. {Delaminating}
2038/0084	. . {Foaming}		
2038/0088	. . {Expanding, swelling}		
2038/0092	. . {Metallizing}		
2038/0096	. . {Riveting}		
38/04	. Punching, slitting or perforating		
	NOTE		
	When classifying in group B32B 38/04 , the operation can be further indexed by using the indexing codes chosen from B32B 38/04 and subgroups		
2038/042	. . {Punching}	2250/00	Layers arrangement
2038/045	. . {Slitting}	2250/02	. 2 layers
2038/047	. . {Perforating}	2250/03	. 3 layers
38/06	. Embossing	2250/04	. 4 layers
38/08	. Impregnating	2250/05	. 5 or more layers
38/10	. Removing layers, or parts of layers, mechanically or chemically	2250/20	. All layers being fibrous or filamentary
38/105	. . {on edges}	2250/22	. All layers being foamed
38/12	. Deep-drawing	2250/24	. All layers being polymeric
38/14	. Printing or colouring	2250/242	. . All polymers belonging to those covered by group B32B 27/32
38/145	. . {Printing}	2250/244	. . All polymers belonging to those covered by group B32B 27/36
38/16	. Drying; Softening; Cleaning	2250/246	. . All polymers belonging to those covered by groups B32B 27/32 and B32B 27/30
38/162	. . {Cleaning}	2250/248	. . All polymers belonging to those covered by group B32B 25/00
38/164	. . {Drying}	2250/26	. All layers being made of paper or paperboard
	NOTE	2250/40	. Symmetrical or sandwich layers, e.g. ABA, ABCBA, ABCCBA
	When classifying in group B32B 38/164 , the drying operation can be further indexed by using the indexing codes chosen from B32B 38/164 and subgroups	2250/42	. Alternating layers, e.g. ABAB(C), AABBAABB(C)
2038/166	. . . {Removing moisture}	2250/44	. Number of layers variable across the laminate
2038/168	. . . {Removing solvent}		
38/18	. Handling of layers or the laminate	2255/00	Coating on the layer surface
38/1808	. . {characterised by the laying up of the layers}		NOTE
38/1816	. . . {Cross feeding of one or more of the layers}		This group is for classification of coatings on a layered product. Specific details of coatings or processes thereof can be found in C08J 7/00 , B05D , C09D , C09J , C23C or D06M .
38/1825	. . {characterised by the control or constructional features of devices for tensioning, stretching or registration}	2255/02	. on fibrous or filamentary layer
38/1833	. . . {Positioning, e.g. registration or centering}	2255/04	. on a particulate layer
38/1841	. . . . {during laying up}	2255/06	. on metal layer
		2255/062	. . metal layer being a foamed layer

Layer arrangements; Coating, impregnation or embedding of layers; Composition of fibres, particles or foam present on a layer; Resin or rubber layer containing a blend of polymers or recycled material

2255/08	. on wood layer	2262/108	. . Rockwool fibres
2255/10	. on synthetic resin layer or on natural or synthetic rubber layer	2262/12	. Conjugate fibres, e.g. core/sheath, side-by-side
2255/102	. . synthetic resin or rubber layer being a foamed layer	2262/14	. Mixture of at least two fibres made of different materials
2255/12	. on paper layer	2264/00	Composition or properties of particles which form a particulate layer or are present as additives
2255/20	. Inorganic coating	2264/02	. Synthetic macromolecular particles
2255/205	. . Metallic coating	2264/0207	. . Particles made of materials belonging to B32B 25/00
2255/24	. Organic non-macromolecular coating	2264/0214	. . Particles made of materials belonging to B32B 27/00
2255/26	. Polymeric coating	2264/0221	. . . Thermoplastic elastomer particles
2255/28	. Multiple coating on one surface	2264/0228	. . . Vinyl resin particles, e.g. polyvinyl acetate, polyvinyl alcohol polymers or ethylene-vinyl acetate copolymers
2260/00	Impregnation or embedding of a layer; Bonding a fibrous, filamentary or particulate layer by using a binder	2264/0235	. . . . Aromatic vinyl resin, e.g. styrenic (co)polymers
2260/02	. Composition of the impregnated, bonded or embedded layer	2264/0242	. . . . Vinyl halide, e.g. PVC, PVDC, PVF or PVDF (co)polymers
2260/021	. . Fibrous or filamentary layer (layers of natural mineral fibres or particles being impregnated in a plastic substance B32B 19/02)	2264/025	. . . Acrylic resin particles, e.g. polymethyl methacrylate or ethylene-acrylate copolymers
2260/023	. . . Two or more layers	2264/0257	. . . Polyolefin particles, e.g. polyethylene or polypropylene homopolymers or ethylene-propylene copolymers
2260/025	. . Particulate layer (layers of natural mineral fibres or particles being impregnated in a plastic substance B32B 19/02)	2264/0264	. . . Polyamide particles
2260/026	. . Wood layer	2264/0271	. . . . Aromatic polyamide particles
2260/028	. . Paper layer	2264/0278	. . . Polyester particles
2260/04	. Impregnation material	2264/0285	. . . . PET or PBT
2260/042	. . Bituminous or tarry substance	2264/0292	. . . Polyurethane particles
2260/044	. . Water-setting substance, e.g. concrete, plaster	2264/04	. Cellulosic particles, e.g. rayon
2260/046	. . Synthetic resin	2264/06	. Vegetal particles
2260/048	. . Natural or synthetic rubber	2264/062	. . Cellulose particles, e.g. cotton
2262/00	Composition of fibres which form a fibrous or filamentary layer or are present as additives	2264/065	. . . Lignocellulosic particles, e.g. jute, sisal, hemp, flax, bamboo
2262/02	. Synthetic macromolecular fibres	2264/067	. . . Wood particles
2262/0207	. . Elastomeric fibres	2264/08	. Animal particles, e.g. leather
2262/0215	. . . Thermoplastic elastomer fibers	2264/10	. Inorganic particles
2262/0223	. . Vinyl resin fibres	2264/101	. . Glass
2262/023	. . . Aromatic vinyl resin, e.g. styrenic (co)polymers	2264/102	. . Oxide or hydroxide
2262/0238	. . . Vinyl halide, e.g. PVC, PVDC, PVF, PVDF	2264/1021	. . . Silica
2262/0246	. . Acrylic resin fibres	2264/1022	. . . Titania
2262/0253	. . Polyolefin fibres (vinyl or acrylic copolymers B32B 2262/0223 or B32B 2262/0246)	2264/1023	. . . Alumina
2262/0261	. . Polyamide fibres	2264/1024	. . . Zirconia
2262/0269	. . . Aromatic polyamide fibres	2264/1025	. . . Zinc oxide
2262/0276	. . Polyester fibres	2264/1026	. . . Mica
2262/0284	. . . Polyethylene terephthalate [PET] or polybutylene terephthalate [PBT]	2264/1027	. . . Clay
2262/0292	. . Polyurethane fibres	2264/104	. . Oxysalt, e.g. carbonate, sulfate, phosphate or nitrate particles
2262/04	. Cellulosic plastic fibres, e.g. rayon	2264/105	. . Metal
2262/06	. Vegetal fibres	2264/1051	. . . Silver or gold
2262/062	. . Cellulose fibres, e.g. cotton	2264/1052	. . . Aluminum
2262/065	. . . Lignocellulosic fibres, e.g. jute, sisal, hemp, flax, bamboo	2264/1053	. . . Alkali metal
2262/067	. . . Wood fibres	2264/1054	. . . Alkaline earth metal
2262/08	. Animal fibres, e.g. hair, wool, silk	2264/1055	. . . Copper or nickel
2262/10	. Inorganic fibres (layered products comprising a layer of natural mineral fibres B32B 19/00)	2264/1056	. . . Iron or steel
2262/101	. . Glass fibres	2264/1057	. . . Chromium
2262/103	. . Metal fibres	2264/1058	. . . Titanium
2262/105	. . Ceramic fibres	2264/1059	. . . Zinc
2262/106	. . Carbon fibres, e.g. graphite fibres	2264/107	. . Ceramic
		2264/108	. . . Carbon, e.g. graphite particles
		2264/12	. Mixture of at least two particles made of different materials

2264/20	• Particles characterised by shape
2264/201	• • Flat or platelet-shaped particles, e.g. flakes
2264/202	• • Solid spheres
2264/203	• • Expanded, porous or hollow particles
2264/2031	• • • Porous particles
2264/2032	• • • Hollow spheres
2264/204	• • Rod- or needle-shaped particles
2264/30	• Particles characterised by physical dimension
2264/301	• • Average diameter smaller than 100 nm
2264/302	• • Average diameter in the range from 100 nm to 1000 nm
2264/303	• • Average diameter greater than 1µm
2264/304	• • Particle length
2264/305	• • Particle size distribution, e.g. unimodal size distribution
2264/306	• • • Multimodal particle size distribution
2264/3065	• • • bimodal size distribution
2264/307	• • Surface area of particles
2264/308	• • Aspect ratio of particles
2264/40	• Pretreated particles
2264/401	• • with inorganic substances
2264/402	• • with organic substances
2264/4021	• • • with silicon-containing compounds
2264/403	• • coated or encapsulated
2264/50	• Particles characterised by their position or distribution in a layer
2264/501	• • homogeneously distributed
2264/502	• • distributed in a gradient manner
2264/503	• • distributed in a predetermined pattern in a thickness direction
2264/504	• • distributed in a predetermined pattern in a direction perpendicular to the thickness
2266/00	Composition of foam
2266/02	• Organic
2266/0207	• • Materials belonging to B32B 25/00
2266/0214	• • Materials belonging to B32B 27/00
2266/0221	• • • Vinyl resin
2266/0228	• • • Aromatic vinyl resin, e.g. styrenic (co)polymers
2266/0235	• • • Vinyl halide, e.g. PVC, PVDC, PVF, PVDF
2266/0242	• • • Acrylic resin
2266/025	• • • Polyolefin (vinyl or acrylic copolymers B32B 2266/0221, B32B 2266/0242)
2266/0257	• • • Polyamide
2266/0264	• • • Polyester
2266/0271	• • • Epoxy resin
2266/0278	• • • Polyurethane
2266/0285	• • • Condensation resins of aldehydes, e.g. with phenols, ureas, melamines
2266/0292	• • • Thermoplastic elastomer
2266/031	• • Bituminous or tarry material
2266/04	• Inorganic
2266/045	• • Metal
2266/049	• • Water-setting material, e.g. concrete, plaster or asbestos cement
2266/053	• • Mineral element, e.g. asbestos or mica
2266/057	• • Silicon-containing material, e.g. glass
2266/06	• Open cell foam
2266/08	• Closed cell foam
2266/10	• characterised by the foam pores
2266/102	• • Nanopores, i.e. with average diameter smaller than 0.1 µm

2266/104	• • Micropores, i.e. with average diameter in the range from 0.1 µm to 0.1 mm
2266/106	• • Unimodal pore distribution
2266/108	• • Bimodal pore distribution
2266/12	• Gel
2266/122	• • Hydrogel, i.e. a gel containing an aqueous composition
2266/124	• • Organogel, i.e. a gel containing an organic composition
2266/126	• • Aerogel, i.e. a supercritically dried gel
2266/128	• • Xerogel, i.e. an air dried gel
2266/14	• Adhesive foam
2270/00	Resin or rubber layer containing a blend of at least two different polymers
2272/00	Resin or rubber layer comprising scrap, waste or recycling material
2274/00	Thermoplastic elastomer material (thermoplastic elastomer fibres B32B 2262/0215, thermoplastic elastomer particles B32B 2264/0221, thermoplastic elastomer foam B32B 2266/0292)

2305/00	Condition, form or state of the layers or laminate
2305/02	• Cellular or porous
2305/022	• • Foam
2305/024	• • Honeycomb
2305/026	• • Porous
2305/028	• • Hollow fillers; Syntactic material
2305/07	• Parts immersed or impregnated in a matrix
2305/073	• • partially
2305/076	• • Prepregs
2305/08	• Reinforcements
2305/10	• Fibres of continuous length
2305/18	• • Fabrics, textiles
2305/182	• • • knitted
2305/184	• • • Braided fabrics
2305/186	• • • Knitted fabrics
2305/188	• • • Woven fabrics
2305/20	• • in the form of a non-woven mat
2305/22	• Fibres of short length
2305/24	• • Whiskers
2305/28	• • in the form of a mat
2305/30	• Fillers, e.g. particles, powders, beads, flakes, spheres, chips
2305/34	• Inserts
2305/342	• • Chips
2305/345	• • Heating elements
2305/347	• • Security elements
2305/38	• Meshes, lattices or nets
2305/54	• Filled microcapsules
2305/55	• Liquid crystals
2305/70	• Scrap or recycled material
2305/72	• Cured, e.g. vulcanised, cross-linked
2305/74	• Partially cured
2305/77	• Uncured, e.g. green
2305/80	• Sintered

Condition, form, state or properties of the layers or laminate

2307/00	Properties of the layers or laminate
2307/10	• having particular acoustical properties

2307/102	. . Insulating	2307/71	. . Resistive to light or to UV
2307/20	. having particular electrical or magnetic properties, e.g. piezoelectric	2307/712	. . Weather resistant
2307/202	. . Conductive	2307/714	. . Inert, i.e. inert to chemical degradation, corrosion
2307/204	. . Di-electric	2307/7145	. . . Rot proof, resistant to bacteria, mildew, mould, fungi
2307/206	. . Insulating	2307/716	. . Degradable
2307/208	. . Magnetic, paramagnetic	2307/7163	. . . Biodegradable
2307/21	. . Anti-static	2307/7166	. . . Water-soluble, water-dispersible
2307/212	. . Electromagnetic interference shielding	2307/718	. . Weight, e.g. weight per square meter
2307/30	. having particular thermal properties	2307/72	. . Density
2307/302	. . Conductive	2307/722	. . . Non-uniform density
2307/304	. . Insulating	2307/724	. . Permeability to gases, adsorption
2307/306	. . Resistant to heat	2307/7242	. . . Non-permeable
2307/3065	. . . Flame resistant or retardant, fire resistant or retardant	2307/7244	. . . . Oxygen barrier
2307/308	. . Heat stability (dimensional stability B32B 2307/734)	2307/7246	. . . . Water vapor barrier
2307/31	. . Heat sealable	2307/7248	. . . . Odour barrier
2307/40	. having particular optical properties (light or UV resistant B32B 2307/71)	2307/726	. . Permeability to liquids, absorption
2307/402	. . Coloured	2307/7265	. . . Non-permeable
2307/4023	. . . on the layer surface, e.g. ink	2307/728	. . Hydrophilic
2307/4026	. . . within the layer by addition of a colorant, e.g. pigments, dyes	2307/73	. . Hydrophobic
2307/404	. . . Multi-coloured	2307/732	. . Dimensional properties
2307/406	. . Bright, glossy, shiny surface	2307/734	. . . Dimensional stability
2307/408	. . Matt, dull surface	2307/736	. . . . Shrinkable
2307/409	. . Iridescent, pearlescent surface	2307/738	. . Thermoformability
2307/41	. . Opaque	2307/74	. . Oxygen absorber
2307/412	. . Transparent	2307/744	. . Non-slip, anti-slip
2307/414	. . Translucent	2307/746	. . Slipping, anti-blocking, low friction
2307/416	. . Reflective	2307/748	. . Releasability
2307/418	. . Refractive	2307/75	. . Printability
2307/42	. . Polarizing, birefringent, filtering	2307/752	. . Corrosion inhibitor
2307/422	. . Luminescent, fluorescent, phosphorescent	2307/754	. . Self-cleaning
2307/50	. having particular mechanical properties	2307/756	. . Refurbishable, i.e. marks or scratches can be removed
2307/51	. . Elastic	2307/758	. . Odour absorbent
2307/514	. . Oriented	2307/762	. . Self-repairing, self-healing
2307/516	. . . mono-axially	2307/764	. . Insect repellent
2307/518	. . . bi-axially		
2307/52	. . . multi-axially		
2307/536	. . Hardness		
2307/538	. . Roughness		
2307/54	. . Yield strength; Tensile strength		
2307/542	. . Shear strength		
2307/544	. . Torsion strength; Torsion stiffness		
2307/546	. . Flexural strength; Flexion stiffness		
2307/548	. . Creep		
2307/552	. . Fatigue strength		
2307/554	. . Wear resistance		
2307/558	. . Impact strength, toughness		
2307/56	. . Damping, energy absorption		
2307/58	. . Cuttability		
2307/581	. . . Resistant to cut		
2307/582	. . Tearability		
2307/5825	. . . Tear resistant		
2307/584	. . Scratch resistance		
2307/70	. Other properties		
2307/702	. . Amorphous		
2307/704	. . Crystalline		
2307/706	. . Anisotropic		
2307/708	. . Isotropic		

2309/00	Parameters for the laminating or treatment process; Apparatus details
2309/02	. Temperature
2309/022	. . Temperature vs pressure profiles
2309/025	. . Temperature vs time profiles
2309/027	. . Ambient temperature
2309/04	. Time
2309/06	. Angles
2309/08	. Dimensions, e.g. volume
2309/10	. . linear, e.g. length, distance, width
2309/105	. . . Thickness
2309/12	. Pressure
2309/125	. . Pressure vs time profiles
2309/14	. Velocity, e.g. feed speeds
2309/16	. Tension
2309/60	. In a particular environment
2309/62	. . Inert
2309/64	. . Sterile
2309/65	. . Dust free, e.g. clean room
2309/66	. . Fluid other than air
2309/68	. . Vacuum
2309/70	. Automated, e.g. using a computer or microcomputer

- 2309/72 . . For measuring or regulating, e.g. systems with feedback loops

Operating procedures; Apparatus details

2310/00 Treatment by energy or chemical effects

- 2310/021 . using electrical effects ([B32B 2310/08](#) and [B32B 2310/12](#) take precedence)
- 2310/022 . . Electrical resistance
- 2310/024 . . Peltier effect
- 2310/025 . . Electrostatic charges
- 2310/027 . using friction
- 2310/028 . using vibration, e.g. sonic or ultrasonic
- 2310/04 . using liquids, gas or steam
- 2310/0409 . . using liquids
- 2310/0418 . . . other than water
- 2310/0427 . . . Liquified gases
- 2310/0436 . . . Oil
- 2310/0445 . . using gas or flames ([B32B 2310/0427](#) takes precedence)
- 2310/0454 . . . Hot air
- 2310/0463 . . . other than air
- 2310/0472 inert gas
- 2310/0481 Ozone
- 2310/049 . . using steam or damp
- 2310/08 . by wave energy or particle radiation
- 2310/0806 . . using electromagnetic radiation
- 2310/0812 . . . using induction
- 2310/0818 using eddy currents
- 2310/0825 . . . using IR radiation
- 2310/0831 . . . using UV radiation
- 2310/0837 . . . using actinic light
- 2310/0843 . . . using laser
- 2310/085 . . . using X-ray
- 2310/0856 . . . using gamma-ray
- 2310/0862 . . . using microwave
- 2310/0868 . . . using radio frequency
- 2310/0875 . . using particle radiation
- 2310/0881 . . . using ion-radiation, e.g. alpha-rays
- 2310/0887 . . . using electron radiation, e.g. beta-rays
- 2310/0893 . . . using neutron radiation
- 2310/12 . using dielectric properties
- 2310/14 . Corona, ionisation, electrical discharge, plasma treatment

2311/00 Metals, their alloys or their compounds

NOTE

Alloys and compounds of specific metals are indexed with the same indexing code as the specific metals

- 2311/005 . Shape memory alloys
- 2311/02 . Noble metals
- 2311/04 . . Gold
- 2311/06 . . Platinum
- 2311/08 . . Silver
- 2311/09 . . Palladium
- 2311/10 . Mercury
- 2311/12 . Copper
- 2311/14 . Lead
- 2311/16 . Tin

- 2311/18 . Titanium
- 2311/20 . Zinc
- 2311/22 . Nickel or cobalt
- 2311/24 . Aluminium
- 2311/30 . Iron, e.g. steel

Inorganic materials used for the layers, laminate or apparatus components

2313/00 Elements other than metals

- 2313/02 . Boron
- 2313/04 . Carbon

2315/00 Other materials containing non-metallic inorganic compounds not provided for in groups [B32B 2311/00](#) - [B32B 2313/04](#)

- 2315/02 . Ceramics
- 2315/06 . Concrete
- 2315/08 . Glass
- 2315/085 . . Glass fiber cloth or fabric
- 2315/10 . Mica
- 2315/12 . Asbestos
- 2315/14 . Mineral wool
- 2315/16 . Clay
- 2315/18 . Plaster

2317/00 Animal or vegetable based

- 2317/02 . Cork
- 2317/04 . Linoleum
- 2317/06 . Bone; Horn; Ivory
- 2317/08 . Natural leather
- 2317/10 . Natural fibres, e.g. wool, cotton
- 2317/12 . Paper, e.g. cardboard
- 2317/122 . . Kraft paper
- 2317/125 . . impregnated with thermosetting resin
- 2317/127 . . Corrugated cardboard
- 2317/16 . Wood, e.g. woodboard, fibreboard, woodchips
- 2317/18 . Cellulose, modified cellulose or cellulose derivatives, e.g. viscose ([B32B 2317/10](#), [B32B 2317/12](#), [B32B 2317/16](#) take precedence)
- 2317/20 . Starch
- 2317/22 . Natural rubber ([synthetic rubber B32B 2319/00](#))
- 2317/24 . Oil ([B32B 2318/02](#) takes precedence)

Other natural products or their composites used for the layers, laminate or apparatus components not provided for in groups [B32B 2311/00](#) - [B32B 2315/12](#) and [B32B 2319/00](#) - [B32B 2398/20](#)

2318/00 Mineral based

- 2318/02 . Oil
- 2318/04 . Stone

2319/00 Synthetic rubber ([natural rubber B32B 2317/22](#))

Organic materials used for the layers, laminate or apparatus components

2323/00 Polyalkenes

- 2323/04 . Polyethylene
- 2323/043 . . HDPE, i.e. high density polyethylene
- 2323/046 . . LDPE, i.e. low density polyethylene
- 2323/10 . Polypropylene

2323/16	. EPDM, i.e. ethylene propylene diene monomer
2325/00	Polymers of vinyl-aromatic compounds, e.g. polystyrene
2327/00	Polyvinylhalogenides
2327/06	. PVC, i.e. polyvinylchloride
2327/12	. containing fluorine
2327/18	. . PTFE, i.e. polytetrafluoroethylene
2329/00	Polyvinylalcohols, polyvinylethers, polyvinylaldehydes, polyvinylketones or polyvinylketals
2329/04	. Polyvinylalcohol
2329/06	. PVB, i.e. polyvinylbutyral
2331/00	Polyvinylesters
2331/04	. Polymers of vinyl acetate, e.g. PVA
2333/00	Polymers of unsaturated acids or derivatives thereof
2333/04	. Polymers of esters
2333/08	. . Polymers of acrylic acid esters, e.g. PMA, i.e. polymethylacrylate
2333/12	. . Polymers of methacrylic acid esters, e.g. PMMA, i.e. polymethylmethacrylate
2355/00	Specific polymers obtained by polymerisation reactions only involving carbon-to-carbon unsaturated bonds, not provided for in a single one of index codes B32B 2323/00 - B32B 2333/00
2355/02	. ABS polymers, i.e. acrylonitrile-butadiene-styrene polymers
2361/00	Phenoplast, aminoplast
2363/00	Epoxy resins
2367/00	Polyesters, e.g. PET, i.e. polyethylene terephthalate
2369/00	Polycarbonates
2371/00	Polyethers, e.g. PEEK, i.e. polyether-etherketone; PEK, i.e. polyetherketone
2375/00	Polyureas; Polyurethanes
2377/00	Polyamides
2379/00	Other polymers having nitrogen, with or without oxygen or carbon only, in the main chain
2379/08	. Polyimides
2383/00	Polysiloxanes
2386/00	Specific polymers obtained by polycondensation or polyaddition not provided for in a single one of index codes B32B 2363/00 - B32B 2383/00
2391/00	Waxes
2395/00	Bituminous material, e.g. tar, asphalt
2398/00	Unspecified macromolecular compounds
2398/10	. Thermosetting resins
2398/20	. Thermoplastics

Particular articles**NOTE**

Parts of specific articles are indexed with the same indexing codes as the articles

2405/00	Adhesive articles, e.g. adhesive tapes (labels B32B 2519/00)
2410/00	Agriculture-related articles
2413/00	Belts (conveyor belts B32B 2433/02; drive belts B32B 2433/04)
2419/00	Buildings or parts thereof (walls, panels B32B 2607/00)
2419/02	. Bricks
2419/04	. Tiles for floors or walls (tiles for roofs B32B 2419/06)
2419/06	. Roofs, roof membranes
2425/00	Cards, e.g. identity cards, credit cards
2429/00	Carriers for sound or information
2429/02	. Records or discs
2432/00	Cleaning articles, e.g. mops, wipes (personal care B32B 2555/00)
2433/00	Closed loop articles
2433/02	. Conveyor belts
2433/04	. Driving belts
2435/00	Closures, end caps, stoppers
2435/02	. for containers
2437/00	Clothing (anti-ballistic clothing B32B 2571/02)
2437/02	. Gloves, shoes
2437/04	. Caps, helmets
2439/00	Containers; Receptacles (closures therefor B32B 2435/00)
2439/02	. Open containers
2439/06	. . Bags, sacks, sachets
2439/40	. Closed containers
2439/46	. . Bags
2439/60	. . Bottles
2439/62	. . Boxes, cartons, cases
2439/66	. . Cans, tins
2439/70	. Food packaging
2439/80	. Medical packaging
2451/00	Decorative or ornamental articles (wall paper B32B 2607/02)
2457/00	Electrical equipment
2457/04	. Insulators
2457/08	. PCBs, i.e. printed circuit boards
2457/10	. Batteries
2457/12	. Photovoltaic modules
2457/14	. Semiconductor wafers
2457/16	. Capacitors
2457/18	. Fuel cells
2457/20	. Displays, e.g. liquid crystal displays, plasma displays
2457/202	. . LCD, i.e. liquid crystal displays
2457/204	. . Plasma displays
2457/206	. . Organic displays, e.g. OLED

2457/208	. . Touch screens
2459/00	Nets, e.g. camouflage nets
2471/00	Floor coverings (B32B 2419/04 takes precedence)
2471/02	. Carpets
2471/04	. Mats
2475/00	Frictional elements
2479/00	Furniture (upholstery B32B 2601/00)
2509/00	Household appliances
2509/10	. Refrigerators or refrigerating equipment
2519/00	Labels, badges
2519/02	. RFID tags
2535/00	Medical equipment, e.g. bandage, prostheses, catheter (medical patches B32B 2556/00)
2551/00	Optical elements
2551/08	. Mirrors
2553/00	Packaging equipment or accessories not otherwise provided for
2553/02	. Shock absorbing
2553/023	. . for use in loose form, e.g. dunnage
2553/026	. . Bubble films
2554/00	Paper of special types, e.g. banknotes
2555/00	Personal care
2555/02	. Diapers or napkins
2556/00	Patches, e.g. medical patches, repair patches
2559/00	Photographic equipment or accessories
2571/00	Protective equipment
2571/02	. defensive, e.g. armour plates, anti-ballistic clothing (camouflage nets B32B 2459/00)
2581/00	Seals; Sealing equipment; Gaskets
2590/00	Signboards, advertising panels, road signs
2597/00	Tubular articles, e.g. hoses, pipes
2601/00	Upholstery
2603/00	Vanes, blades, propellers, rotors with blades
2605/00	Vehicles
2605/003	. Interior finishings
2605/006	. Transparent parts made from plastic material, e.g. windows
2605/08	. Cars
2605/10	. Trains
2605/12	. Ships
2605/16	. Submarines
2605/18	. Aircraft (blades, propellers B32B 2603/00)
2607/00	Walls, panels
2607/02	. Wall papers, wall coverings