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 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,
   • "First place rule" is used in the following groups B32B 9/04, B32B 11/04, B32B 13/04, B32B 15/04, B32B 19/04, B32B 21/04, B32B 23/046, B32B 23/12, B32B 25/04, B32B 27/06, B32B 29/002.
   However, when these groups are not characterised by the specific material adjacency to be classified, then, multiple classification is given, e.g. a layered product having a stone layer next to a bituminous layer would be classified in B32B 9/04 and in B32B 11/04. For a cellulosic plastic layer next to a metal layer or to a wood layer B32B 23/042 or B32B 23/044, respectively, take precedence (i.e. first rule does not apply). For layered products comprising at least two ceramic layers, products comprising only ceramic layers are classified in group B32B 18/00 and products comprising two ceramics layers and at least one layer of another material are classified in B32B 18/00 and B32B 9/04.
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 1/04 covered by B32B 3/00 - B32B 3/08
- B32B 1/06 covered by B32B 13/02
- B32B 3/08 - B32B 3/22 covered by B32B 3/08 - B32B 3/22
- B32B 3/24 covered by B32B 26/00/21 - B32B 26/00/23
- B32B 5/28 covered by B32B 2260/021 - B32B 2260/023
- B32B 17/02 covered by B32B 2260/04 and B32B 2260/04
- B32B 17/04 covered by B32B 2260/04
- B32B 17/12 covered by B32B 17/0067
- B32B 23/02 covered by B32B 2260/04 and B32B 5/02 - B32B 5/12
- B32B 27/02 covered by B32B 2260/04 and B32B 5/02 - B32B 5/12
- B32B 27/04 covered by B32B 2260/048

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.

1/00 . 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 layers B32B 5/02; particulate layers B32B 5/16; foamed layers B32B 5/18); Layered products having particular features of form (receptacles or tubular products B32B 1/00) }

WARNING
Group B32B 3/00 is incomplete pending reclassification of documents from group B29D 2009/00. Groups B29D 2009/00 and B32B 3/00 should be considered in order to perform a complete search.

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 { (B32B 27/205 takes precedence; foam layer B32B 15/08) }; { 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) }
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.

Layered products characterised by structural features of a [fibrous or filamentary layer (B32B 15/02, B32B 21/02 take precedence; layer formed of particles B32B 5/16; layers formed of natural mineral fibres B32B 19/00; coated or impregnated fibrous or filamentary layers 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.]

Layered products characterised by features of a layer formed of particles, e.g. chips, powder (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)

Layered products characterised by features of a layer [of] foamed material

Layered products 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)]

Layered products characterised by one layer [being a fibrous or filamentary layer]

Layered products characterised by 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)]

Layered products characterised by impregnated or embedded in a plastic substance (not used)

Layered products characterised by one layer [being formed of particles, e.g. chips, granules, powder]

Layered products characterised by at least two layers being foamed and next to each other (all layers being foamed B32B 2250/22)

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

Physical, chemical or physicochemical properties

Mechanical properties

Optical properties

Electric or magnetic properties

Thermal properties

Heat-shrinkability
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
- [“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)
9/008 . comprising animal or vegetable substances, e.g. cork, bamboo, starch
9/009 . (comprising leather)
9/00 . 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))
9/01 . of metal
9/02 . of wood
9/03 . (comprising natural rubber or synthetic rubber)
9/04 . (comprising resin)
9/05 . (of foam)
9/06 . (made of fibres or filaments)
9/07 . (made of particles)
9/08 . (made of paper or cardboard)
11/00 Layered products comprising a layer of bituminous or tarry substances

11/01 . 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)
11/05 . (made of paper or cardboard)
11/06 . (of metal)
11/10 . next to a fibrous or filamentary layer
11/12 . next to a particulate layer
13/00 Layered products comprising a 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)
Layered products characterised by particular substances used

15/00 Layered products comprising a layer of metal
15/01 . all layers being exclusively metallic [(making layered metal workpieces by pressure cladding B32K 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]
Layered products characterised by particular substances used

17/10211 . . . . . . [Doped dielectric layer, electrically conductive, e.g. SnO2: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 . . . . . . [optochromic, 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 polurethane]
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 B33B 11/001)]
17/10834 . . . . . . [using a fluid]
17/10844 . . . . . . [using a fluid]
17/10853 . . . . . . [the membrane being bag-shaped]
17/10862 . . . . . . [using pressing-rolls]
17/10871 . . . . . . [in combination with particular heat treatment]
Layered products characterised by particular substances used

B32B

Layered products comprising a layer of natural mineral fibres or particles, e.g. asbestos, mica

19/00

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

Layered products comprising a layer of natural mineral fibres or particles, e.g. asbestos, mica

19/02

19/04

[the layer of fibres or particles being impregnated or] embedded in a plastic substance

next to another layer [of the same or of a different material (B32B 17/067 takes precedence)]

19/041

19/042

19/043

19/045

19/046

19/047

19/048

19/049

next to a fibrous or filamentary layer

next to a particulate layer

19/08

next to a particulate layer

next to a fibrous or filamentary layer

next to a particulate layer

next to a particulate layer

Layered products comprising a layer of wood, e.g. wood board, veneer, wood particle board

21/00

21/02

21/04

21/042

21/045

21/047

21/06

21/08

21/10

21/12

21/13

21/14

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

23/04

23/08

23/10

23/12

23/14

23/16

23/18

23/20

23/22

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

25/04

25/042

25/045

25/047

25/06

25/08

25/10

25/12
Layered products characterised by particular substances used

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 tar 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 polycarbonates)
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, PVDI)
27/306 . . . (comprising vinyl acetate or vinyl alcohol (co)polymers)
27/308 . . . (comprising acrylic (co)polymers)

27/32  . comprising polylefins ([B32B 27/30 takes precedence])
27/322  . . . (comprising halogenated polylefins, e.g. PTFE)
27/325  . . . (comprising polycycloolefins)
27/327  . . . (comprising polylefins obtained by a metallocene or single-site catalyst)
27/34  . . . comprising polyamides
27/36  . comprising polystyrenes
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

33/00  Layered products characterised by particular properties or particular surface features, e.g. particular surface coatings (surface unevennesses or non-uniformities B32B 3/00): Layered products designed for particular purposes not covered by another single class

WARNING
Group B32B 33/00 is incomplete pending reclassification of documents from group B29D 2009/00.
Groups B29D 2009/00 and B32B 33/00 should be considered in order to perform a complete search.

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)
37/0061 . . . (the apparatus being an office laminator)
37/0069 . . . (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)
37/0092 . . . (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 platens)
37/1063 . . . (using an electrostatic force)
37/1072 . . . (using a fluid jet)
37/1081 . . . (using a magnetic force)
37/109 . . . (using a squeegee)
37/12 . . . characterised by using adhesives
37/1207 . . . (Heat-activated adhesive (laminating by the partial melting of layers to form the bond B32B 37/04 takes precedence))
37/1215 . . . (Hot-melt adhesive)
Methods or apparatus for making layered products; Treatment of the layers or of the layered products

B32B

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
  - as steps of the laminating processes, or
  - in line with the laminating 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 lapping 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

38/0016 . . . {Abrading}

38/002 . . . {Sandblasting}

38/0024 . . . {Crushing}

38/0028 . . . {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)}

**NOTE**

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

38/004 . . . {by physically contacting the layers, e.g. by the use of heated platens or rollers}

38/0044 . . . {for creating local stresses}

38/0048 . . . {Annealing, relaxing}

38/0052 . . . {Other operations not otherwise provided for}

38/0056 . . . {Moistening}

38/006 . . . {Relieving internal or residual stresses}

38/0064 . . . {Smoothing, polishing, making a glossy surface}

38/0068 . . . {Changing crystal orientation}

38/0072 . . . {Orienting fibers}

38/0076 . . . {Curing, vulcanising, cross-linking}

2038/008 . . . {Sewing, stitching}

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}

2038/045 . . . {Slitting}

2038/047 . . . {Perforating}

38/06 . . . Embossing

38/08 . . . Impregnating

38/10 . . . Removing layers, or parts of layers, mechanically or chemically (punching, slitting or perforating B32B 38/04)

38/105 . . . {on edges}

38/12 . . . Deep-drawing

38/14 . . . Printing or colouring

38/145 . . . {Printing}

38/16 . . . Drying; Softening; Cleaning

38/162 . . . {Cleaning}

38/164 . . . {Drying}

**NOTE**

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

2038/166 . . . {Removing moisture}

2038/168 . . . {Removing solvent}

38/18 . . . Handling of layers or the laminate

38/1808 . . . {characterised by the laying up of the layers}

38/1816 . . . {Cross feeding of one or more of the layers}

38/1825 . . . {characterised by the control or constructional features of devices for tensioning, stretching or registration}

38/1833 . . . {Positioning, e.g. registration or centring}

38/1841 . . . {During laying up}

38/185 . . . . . . . . {combined with the cutting of one or more layers}

38/1858 . . . {using vacuum}

38/1866 . . . {conforming the layers or laminate to a convex or concave profile}

38/1875 . . . {Tensioning}

38/1883 . . . {Detensioning}

2038/1891 . . . {Using a robot for handling the layers}

39/00 Layout of apparatus or plants, e.g. modular laminating systems

41/00 Arrangements for controlling or monitoring laminating processes; Safety arrangements

41/02 . . . Safety arrangements

2041/04 . . . {Detecting wrong registration, misalignment, deviation, failure}

2041/06 . . . {Starting the lamination machine or method}
Methods or apparatus for making layered products; Treatment of the layers or of the layered products

2260/02 . Fibrous or filamentary layer (layers of natural mineral fibres or particles being impregnated in a plastic substance B32B 19/02)
2260/023 . Two or more layers
2260/025 . Particulate layer (layers of natural mineral fibres or particles being impregnated in a plastic substance B32B 19/02)
2260/026 . Wood layer
2260/028 . Paper layer
2260/04 . Impregnation material
2260/042 . Bituminous or tarry substance
2260/044 . Water-setting substance, e.g. concrete, plaster
2260/046 . Synthetic resin
2260/048 . Natural or synthetic rubber

2255/20 . All layers being fibrous or filamentary
2255/22 . All layers being foam
2255/24 . All layers being polymeric
2255/242 . All polymers belonging to those covered by group B32B 27/32
2255/244 . All polymers belonging to those covered by group B32B 27/36
2255/246 . All polymers belonging to those covered by groups B32B 27/32 and B32B 27/30
2255/248 . All polymers belonging to those covered by group B32B 25/00
2255/26 . All layers being made of paper or paperboard
2255/40 . Symmetrical or sandwich layers, e.g. ABA, ABCBA, ABCCBA
2255/42 . Alternating layers, e.g. ABAB(C), AABBAABB(C)
2255/44 . Number of layers variable across the laminate

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 recived material

2255/20 . on fibrous or filamentary layer
2255/44 . on a particulate layer
2255/6 . on metal layer
2255/62 . metal layer being a foamed layer
2255/8 . on wood layer
2255/10 . on synthetic resin layer or on natural or synthetic rubber layer
2255/102 . synthetic resin or rubber layer being a foamed layer

2255/12 . on paper layer
2255/20 . Inorganic coating
2255/205 . Metallic coating
2255/24 . Organic non-macromolecular coating
2255/26 . Polymeric coating
2255/28 . Multiple coating on one surface

2260/00 Impregnation or embedding of a layer; Bonding a fibrous, filamentary or particulate layer by using a binder
2260/02 . Composition of the impregnated, bonded or embedded layer

NOTE
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.

2262/00 Composition of fibres which form a fibrous or filamentary layer or are present as additives
2262/02 . Synthetic macromolecular fibres
2262/0207 . Elastomeric fibres
2262/0215 . Thermoplastic elastomer fibres
2262/0223 . Vinyl resin fibres
2262/023 . Aromatic vinyl resin, e.g. styrenic (co)polymers
2262/0238 . Vinyl halide, e.g. PVC, PVDC, PVF, PVDF
2262/0246 . Acrylic resin fibres
2262/0253 . Polyolefin fibres (vinyl or acrylic copolymers B32B 2262/0223 or B32B 2262/0246)
2262/0261 . Polyamide fibres
2262/0269 . Aromatic polyamide fibres
2262/0276 . Polyester fibres
2262/0284 . Polyethylene terephthalate [PET] or polybutylene terephthalate [PBT]
2262/0292 . Polyurethane fibres
2262/04 . Cellulosic plastic fibres, e.g. rayon
2262/06 . Vegetable fibres
2262/062 . Cellulose fibres, e.g. cotton
2262/065 . Lignocellulosic fibres, e.g. jute, sisal, hemp, flax, bamboo
2262/067 . Wood fibres
2262/08 . Animal fibres, e.g. hair, wool, silk
2262/10 . Inorganic fibres (layered products comprising a layer of natural mineral fibres B32B 19/00)
2262/101 . Glass fibres
2262/103 . Metal fibres
2262/105 . Ceramic fibres
2262/106 . Carbon fibres, e.g. graphite fibres
2262/108 . Rockwool fibres
2262/12 . Conjugate fibres, e.g. core/sheath, side-by-side
2262/14 . Mixture of at least two fibres made of different materials

2264/00 Composition of particles which form a particulate layer or are present as additives
2264/02 . Synthetic macromolecular particles
2264/0207 . Particles made of materials belonging to B32B 25/00
2264/0214 . Particles made of materials belonging to B32B 27/00
2264/0221 . Thermoplastic elastomer particles
2264/0228 . Vinyl resin particles
2264/0235 . Aromatic vinyl resin, e.g. styrenic (co)polymers
2264/0242 . Vinyl halide, e.g. PVC, PVDC, PVF, PVDF
Layer arrangements; Coating, impregnation or embedding of layers; Composition of fibres, particles or foam present...

\[ \text{2266/025} \] Acrylic resin particles

\[ \text{2266/0257} \] Polyolefin particles (vinyl or acrylic copolymers B32B 2264/0228, B32B 2264/025)

\[ \text{2266/0264} \] Polymide particles

\[ \text{2266/0271} \] Aromatic polyamide particles

\[ \text{2266/0278} \] Polyester particles

\[ \text{2266/0285} \] PET or PBT

\[ \text{2266/0292} \] Polyurethane particles

\[ \text{2266/04} \] Cellulosic particles, e.g. rayon

\[ \text{2266/06} \] Vegetal particles

\[ \text{2266/062} \] Cellulose particles, e.g. cotton

\[ \text{2266/065} \] Lignocellulosic particles, e.g. jute, sisal, hemp, flax, bamboo

\[ \text{2266/067} \] Wood particles

\[ \text{2266/08} \] Animal particles, e.g. leather

\[ \text{2266/10} \] Inorganic particles (layered products comprising a layer of natural mineral particles B32B 19/00)

\[ \text{2266/101} \] Glass particles

\[ \text{2266/102} \] Oxide or hydroxide particles, e.g. silica, TiO\(_2\) particles

\[ \text{2266/104} \] Oxysalt particles, e.g. carbonate, sulfate, phosphate or nitrate particles

\[ \text{2266/105} \] Metal particles

\[ \text{2266/107} \] Ceramic particles

\[ \text{2266/108} \] Carbon particles, e.g. graphite particles

\[ \text{2266/12} \] Mixture of at least two particles made of different materials

\[ \text{2266/00} \] Composition of foam

**WARNING**

Group B32B 2266/00 is impacted by reclassification into groups B32B 2266/10, B32B 2266/102, B32B 2266/104, B32B 2266/106, B32B 2266/108, B32B 2266/12, B32B 2266/122, B32B 2266/124, B32B 2266/126, B32B 2266/128, and B32B 2266/14.

All groups listed in this Warning should be considered in order to perform a complete search.

\[ \text{2266/02} \] Organic

**WARNING**

Group B32B 2266/02 is impacted by reclassification into group B32B 2266/031.

Groups B32B 2266/02 and B32B 2266/031 should be considered in order to perform a complete search.

\[ \text{2266/0207} \] Materials belonging to B32B 25/00

\[ \text{2266/0214} \] Materials belonging to B32B 27/00

\[ \text{2266/0221} \] Vinyl resin

\[ \text{2266/0228} \] Aromatic vinyl resin, e.g. styrenic (co)polymers

\[ \text{2266/0235} \] Vinyl halide, e.g. PVC, PVDC, PVF, PVDF

\[ \text{2266/0242} \] Acrylic resin

\[ \text{2266/025} \] Polyolefin (vinyl or acrylic copolymers B32B 2266/0221, B32B 2266/0242)

\[ \text{2266/0257} \] Polyamide

\[ \text{2266/0264} \] Polyester

\[ \text{2266/0271} \] Epoxy resin

\[ \text{2266/0278} \] Polyurethane

\[ \text{2266/0285} \] Condensation resins of aldehydes, e.g. with phenols, ureas, melamines

\[ \text{2266/0292} \] Thermoplastic elastomer

\[ \text{2266/031} \] Bituminous or tarry material

\[ \text{2266/04} \] Inorganic

**WARNING**

Group B32B 2266/04 is impacted by reclassification into groups B32B 2266/049, B32B 2266/053, and B32B 2266/057.

All groups listed in this Warning should be considered in order to perform a complete search.

\[ \text{2266/053} \] Mineral element, e.g. asbestos or mica

\[ \text{2266/057} \] Silicon-containing material, e.g. glass

\[ \text{2266/06} \] Open cell foam

\[ \text{2266/08} \] Closed cell foam

\[ \text{2266/10} \] characterised by the foam pores

**WARNING**

Groups B32B 2266/049, B32B 2266/053, and B32B 2266/057 are incomplete pending reclassification of documents from B32B 2266/04.

All groups listed in this Warning should be considered in order to perform a complete search.

\[ \text{2266/102} \] Nanopores, i.e. with average diameter smaller than 0.1 µm

\[ \text{2266/104} \] Micro pores, i.e. with average diameter in the range from 0.1 µm to 0.1 mm

\[ \text{2266/106} \] Unimodal pore distribution

\[ \text{2266/108} \] Bimodal pore distribution

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**WARNING**

Group B32B 2266/00 is impacted by reclassification into groups B32B 2266/10, B32B 2266/102, B32B 2266/104, B32B 2266/106, and B32B 2266/108 are incomplete pending reclassification of documents from group B32B 2266/00.

All groups listed in this Warning should be considered in order to perform a complete search.

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**WARNING**

Group B32B 2266/04 is impacted by reclassification into groups B32B 2266/049, B32B 2266/053, and B32B 2266/057.

All groups listed in this Warning should be considered in order to perform a complete search.

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**WARNING**

Groups B32B 2266/049, B32B 2266/053, and B32B 2266/057 are incomplete pending reclassification of documents from B32B 2266/04.

All groups listed in this Warning should be considered in order to perform a complete search.
Layer arrangements; Coating, impregnation or embedding of layers; Composition of fibres, particles or foam present...

2266/12 . Gel

**WARNING**

Groups B32B 2266/12, B32B 2266/122, B32B 2266/124, B32B 2266/126, and B32B 2266/128 are incomplete pending reclassification of documents from group B32B 2266/00.

All groups listed in this Warning should be considered in order to perform a complete search.

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

**WARNING**

Group B32B 2266/14 is incomplete pending reclassification of documents from group B32B 2266/00.

Groups B32B 2266/00 and B32B 2266/14 should be considered in order to perform a complete search.

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)

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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

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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

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2307/00 Properties of the layers or laminate

2307/10 . . . having particular acoustical properties

2307/102 . . . Insulating

2307/20 . . . having particular electrical or magnetic properties, e.g. piezoelectric

2307/202 . . . Conductive

2307/204 . . . Di-electric

2307/206 . . . Insulating

2307/208 . . . Magnetic, paramagnetic

2307/21 . . . Anti-static

2307/212 . . . Electromagnetic interference shielding

2307/30 . . . having particular thermal properties

2307/302 . . . Conductive

2307/304 . . . Insulating

2307/306 . . . Resistant to heat

2307/3065 . . . Flame resistant or retardant, fire resistant or retardant

2307/308 . . . Heat stability (dimensional stability B32B 2307/734)

2307/31 . . . Heat sealable

2307/40 . . . having particular optical properties (light or UV resistant B32B 2307/71)

2307/402 . . . Coloured

2307/4023 . . . on the layer surface, e.g. ink

2307/4026 . . . within the layer by addition of a colorant, e.g. pigments, dyes

2307/404 . . . Multi-coloured

2307/406 . . . Bright, glossy, shiny surface

2307/408 . . . Matt, dull surface

2307/409 . . . Iridescence, pearlescent surface

2307/41 . . . Opaque

2307/412 . . . Transparent

2307/414 . . . Translucent

2307/416 . . . Reflective

2307/418 . . . Refractive

2307/42 . . . Polarizing, birefringent, filtering

2307/422 . . . Luminescent, fluorescent, phosphorescent

2307/50 . . . having particular mechanical properties

2307/51 . . . Elastic

2307/514 . . . Oriented

2307/516 . . . mono-axially

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

Parameters of the laminating or treatment process; Apparatus details

- 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
- 2307/71 Resistive to light or to UV
- 2307/712 Weather resistant
- 2307/714 Inert, i.e. inert to chemical degradation, corrosion
- 2307/7145 Rot proof, resistant to bacteria, mildew, mould, fungi
- 2307/716 Degradable
- 2307/7163 Biodegradable
- 2307/7166 Water-soluble, water-dispersible
- 2307/718 Weight, e.g. weight per square meter
- 2307/72 Density
- 2307/722 Non-uniform density
- 2307/724 Permeability to gases, adsorption
- 2307/7242 Non-permeable
- 2307/7244 Oxygen barrier
- 2307/7246 Water vapor barrier
- 2307/7248 Odour barrier
- 2307/726 Permeability to liquids, absorption
- 2307/7265 Non-permeable
- 2307/728 Hydrophilic
- 2307/73 Hydrophobic
- 2307/732 Dimensional properties
- 2307/734 Dimensional stability
- 2307/736 Shrinkable
- 2307/738 Thermoformability
- 2307/74 Oxygen absorber
- 2307/744 Non-slip, anti-slip
- 2307/746 Slipping, anti-blocking, low friction
- 2307/748 Releasability
- 2307/75 Printability
- 2307/752 Corrosion inhibitor
- 2307/754 Self-cleaning
- 2307/756 Refurbishable, i.e. marks or scratches can be removed
- 2307/758 Odour absorbent
- 2307/762 Self-repairing, self-healing
- 2307/764 Insect repellent

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

- 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
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 Polynylesters
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. polymethacrylate

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 2332/00 - 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
Organic materials used for the layers, laminate or apparatus components

B32B

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

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  Vans, 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
<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
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<td>2605/12</td>
<td>Ships</td>
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<td>2605/18</td>
<td>Aircraft (blades, propellers B32B 2603/00)</td>
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<tr>
<td>2607/00</td>
<td>Walls, panels</td>
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<tr>
<td>2607/02</td>
<td>Wall papers, wall coverings</td>
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