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 of 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:

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CPC - 2020.02
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.

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)

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.

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 (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)
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 (or) 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 19/047, 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
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.

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 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)
Layered products characterised by particular substances used

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 17/10087, 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]
Layered products characterised by particular substances used

B32B

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 1/11)]
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 1/17)]
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 B60O 3/20; structural combinations of lighting devices with other elements P21V 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]

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
Layered products characterised by particular substances used

B32B

B32B 18/00 (continued) processing are indexed with codes chosen from C04B 2237/00 - C04B 2237/88

19/00 Layered products comprising of 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 of 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 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 of a layer ofcellulosic 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 of 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 2250/24)]

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 of 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]
Layered products characterised by particular substances used

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. styrene (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 cellulose 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 2250/261)}
29/007 . . {next to a foam layer}
29/009 . . next to a fibrous or filamentary layer
29/004 . . next to a particulate layer
29/006 . . specially treated, e.g. surfaced, parchmentised { (B32B 2255/12, B32B 2260/028 take precedence) }
29/008 . . 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

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 lamination (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}
37/0009 . . {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}
Methods or apparatus for making layered products; Treatment of the layers or of the layered products

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 platen gap]
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]
37/1223 . . . [film-shaped]
37/123 . . . [net-shaped]
37/1238 . . . [in the form of powder]
37/1246 . . . [Other adhesives]
37/1253 . . . [curable]
37/1261 . . . [moisture curable]
37/1269 . . . [multi-component adhesive]
37/1276 . . . [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]
37/148 . . . [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)
37/243 . . . [Coating]
37/246 . . . [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
37/262 . . . [Partition plates or sheets for separating several laminates pressed simultaneously]
37/264 . . . [Pressure equalising layers]
37/266 . . . [Cushioning layers]
37/268 . . . [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 laminating processes, or
  b. 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 laying up and registration B32B 38/185 takes precedence)]
Methods or apparatus for making layered products; Treatment of the layers or of the layered products

B32B

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))

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)
2038/0044 . . (for creating local stresses)
2038/0048 . . (Annealing, relaxing)
2038/0052 . (Other operations not otherwise provided for)
2038/0056 . . (Moistening)
2038/006 . . (Relieving internal or residual stresses)
2038/0064 . . (Smoothing, polishing, making a glossy surface)
2038/0068 . (Changing crystal orientation)
2038/0072 . (Orienting fibers)
2038/0076 . . (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

2038/0042 . . (Punching)
2038/0045 . . (Slitting)
2038/0047 . . (Perforating)
38/06 . Embossing
38/08 . Impregnating
38/10 . Removing layers, or parts of layers, mechanically or chemically
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 centering)
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 lamination processes; Safety arrangements
41/02 . Safety arrangements
2041/04 . (Detecting wrong registration, misalignment, deviation, failure)
2041/06 . (Starting the lamination machine or method)

43/00 Operations specially adapted for layered products and not otherwise provided for, e.g. repairing; Apparatus therefor
43/003 . (Cutting)
43/006 . (Delaminating)

2250/00 Layers arrangement
2250/02 . . 2 layers
2250/03 . . 3 layers
2250/04 . . 4 layers
2250/05 . . 5 or more layers
2250/20 . All layers being fibrous or filamentary
2250/22 . All layers being foamed
2250/24 . All layers being polymeric
2250/242 . . All polymers belonging to those covered by group B32B 27/32
2250/244 . . All polymers belonging to those covered by group B32B 27/36
2250/246 . . All polymers belonging to those covered by groups B32B 27/32 and B32B 27/30
2250/248 . . All polymers belonging to those covered by group B32B 25/00
2250/26 . All layers being made of paper or paperboard
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

2255/00 Coating on the layer surface

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.

2255/02 . on fibrous or filamentary layer
2255/04 . on a particulate layer
2255/06 . on metal layer
2255/08 . on wood layer
2255/10 . on synthetic resin layer or on natural or synthetic rubber layer
2255/12 . on paper layer
2255/20 . Inorganic 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
2260/021 . 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

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 . Acryluc 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 fibres, e.g. rayon
2262/06 . Vegetal 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
2264/025 . Acrylic resin particles
2264/0257 . Polyolefin particles (vinyl or acrylic copolymers B32B 2264/0228, B32B 2264/025)
2264/0264 . Polyamide particles
2264/0271 . Aromatic polyamide particles
2264/0278 . Polyester particles
2264/0285 . PET or PBT
2264/0292 . Polyurethane particles
2264/04 . Cellulosic particles, e.g. rayon
2264/06 . Vegetal particles
2264/062 . Cellulose particles, e.g. cotton
2264/065 . Lignocellulosic particles, e.g. jute, sisal, hemp, flax, bamboo
2264/067 . Wood particles
2264/08 . Animal particles, e.g. leather
2264/10 . Inorganic particles (layered products comprising a layer of natural mineral fibres B32B 19/00)
2264/101 . Glass particles
2264/102 . Oxide or hydroxide particles, e.g. silica particles, TiO₂ particles
2264/104 . Oxysalt particles, e.g. carbonate, sulfate, phosphate or nitrate particles
2264/105 . Metal particles
2264/107 . Ceramic particles
2264/108 . Carbon particles, e.g. graphite particles
Composition of foam

Thermoplastic elastomer material (thermoplastic elastomer fibres B32B 2262/0215, thermoplastic elastomer particles B32B 2264/0221, thermoplastic elastomer foam B32B 2266/0242)

Properties of the layers or laminate

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

Material arrangements; Coating, impregnation or embedding of layers; Composition of fibres, particles or foam present...
Condition, form, state or properties of the layers or laminate

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
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

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
### 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

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<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>2311/005</td>
<td>Shape memory alloys</td>
</tr>
<tr>
<td>2311/02</td>
<td>Noble metals</td>
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<tr>
<td>2311/04</td>
<td>Gold</td>
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<tr>
<td>2311/30</td>
<td>Iron, e.g. steel</td>
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### Inorganic materials used for the layers, laminate or apparatus components

#### 2313/00 Elements other than metals

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<td>Carbon</td>
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#### 2315/00 Other materials containing non-metallic inorganic compounds not provided for in groups B32B 2311/00 - B32B 2315/04

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<td>Glass</td>
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<td>2315/085</td>
<td>Glass fiber cloth or fabric</td>
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<td>2315/10</td>
<td>Mica</td>
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<td>2315/12</td>
<td>Asbestos</td>
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<td>Mineral wool</td>
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<td>2315/16</td>
<td>Clay</td>
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<td>2315/18</td>
<td>Plaster</td>
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#### 2317/00 Animal or vegetable based

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<th>Description</th>
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<tr>
<td>2317/02</td>
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<tr>
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<td>Linoleum</td>
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### Organic materials used for the layers, laminate or apparatus components

#### 2323/00 Polymers of unsaturated acids or derivatives thereof

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<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2323/04</td>
<td>Polymethylene</td>
</tr>
<tr>
<td>2323/043</td>
<td>HDPE, i.e. high density polyethylene</td>
</tr>
<tr>
<td>2323/046</td>
<td>LDPE, i.e. low density polyethylene</td>
</tr>
<tr>
<td>2323/10</td>
<td>Polypropylene</td>
</tr>
<tr>
<td>2323/16</td>
<td>EPDM, i.e. ethylene propylene diene monomer</td>
</tr>
</tbody>
</table>

#### 2325/00 Polymers of vinyl-aromatic compounds, e.g. polystyrene

<table>
<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2325/06</td>
<td>Synthetic rubber (natural rubber B32B 2317/22)</td>
</tr>
</tbody>
</table>

### Other natural products or their composites 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

<table>
<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2327/06</td>
<td>Bone; Horn; Ivory</td>
</tr>
<tr>
<td>2327/08</td>
<td>Natural leather</td>
</tr>
<tr>
<td>2327/10</td>
<td>Natural fibres, e.g. wool, cotton</td>
</tr>
<tr>
<td>2327/12</td>
<td>Paper, e.g. cardboard</td>
</tr>
<tr>
<td>2327/122</td>
<td>Kraft paper</td>
</tr>
<tr>
<td>2327/125</td>
<td>Impregnated with thermosetting resin</td>
</tr>
<tr>
<td>2327/127</td>
<td>Corrugated cardboard</td>
</tr>
<tr>
<td>2327/16</td>
<td>Wood, e.g. woodboard, fibreboard, woodchips</td>
</tr>
<tr>
<td>2327/18</td>
<td>Cellulose, modified cellulose or cellulose derivatives, e.g. viscose (B32B 2317/10, B32B 2317/12, B32B 2317/16 take precedence)</td>
</tr>
<tr>
<td>2327/20</td>
<td>Starch</td>
</tr>
<tr>
<td>2327/22</td>
<td>Natural rubber (synthetic rubber B32B 2319/00)</td>
</tr>
<tr>
<td>2327/24</td>
<td>Oil (B32B 2318/02 takes precedence)</td>
</tr>
</tbody>
</table>

#### 2318/00 Other materials

<table>
<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2318/02</td>
<td>Oil</td>
</tr>
<tr>
<td>2318/04</td>
<td>Stone</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2327/06</td>
<td>PVC, i.e. polyvinylchloride</td>
</tr>
<tr>
<td>2327/12</td>
<td>containing fluorine</td>
</tr>
<tr>
<td>2327/18</td>
<td>PTFE, i.e. polytetrafluoroethylene</td>
</tr>
</tbody>
</table>

#### 2329/00 Polymers of vinylalcohols, polyvinylethers, polyvinylaldehydes, polyvinylketones or polyvinylketals

<table>
<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2329/04</td>
<td>Polyvinylalcohol</td>
</tr>
<tr>
<td>2329/06</td>
<td>PVC, i.e. polyvinylbutyral</td>
</tr>
</tbody>
</table>

### 2331/00 Polynylesters

<table>
<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2331/04</td>
<td>Polymers of vinyl acetate, e.g. PVA</td>
</tr>
</tbody>
</table>

#### 2333/00 Polymers of unsaturated acids or derivatives thereof

<table>
<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2333/04</td>
<td>Polymers of esters</td>
</tr>
<tr>
<td>2333/08</td>
<td>Polymers of acrylic acid esters, e.g. polymethacrylate</td>
</tr>
<tr>
<td>2333/12</td>
<td>Polymers of methacrylic acid esters, e.g. PMMA, i.e. polymethacrylate</td>
</tr>
</tbody>
</table>

#### 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

<table>
<thead>
<tr>
<th>Index Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2355/00</td>
<td></td>
</tr>
</tbody>
</table>
Organic materials used for the layers, laminate or apparatus components

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 Polymides
2379/00 Other polymers having nitrogen, with or without oxygen or carbon only, in the main chain
2379/08 . Polyimidcs
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
2439/09 . 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
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2571/02</td>
<td>defensive, e.g. armour plates, anti-ballistic clothing</td>
</tr>
<tr>
<td></td>
<td>(camouflage nets B32B 2459/00)</td>
</tr>
<tr>
<td>2581/00</td>
<td>Seals; Sealing equipment; Gaskets</td>
</tr>
<tr>
<td>2590/00</td>
<td>Signboards, advertising panels, road signs</td>
</tr>
<tr>
<td>2597/00</td>
<td>Tubular articles, e.g. hoses, pipes</td>
</tr>
<tr>
<td>2601/00</td>
<td>Upholstery</td>
</tr>
<tr>
<td>2603/00</td>
<td>Vanes, blades, propellers, rotors with blades</td>
</tr>
<tr>
<td>2605/00</td>
<td>Vehicles</td>
</tr>
<tr>
<td>2605/003</td>
<td>Interior finishings</td>
</tr>
<tr>
<td>2605/006</td>
<td>Transparent parts made from plastic material, e.g. windows</td>
</tr>
<tr>
<td>2605/08</td>
<td>Cars</td>
</tr>
<tr>
<td>2605/10</td>
<td>Trains</td>
</tr>
<tr>
<td>2605/12</td>
<td>Ships</td>
</tr>
<tr>
<td>2605/16</td>
<td>Submarines</td>
</tr>
<tr>
<td>2605/18</td>
<td>Aircraft (blades, propellers B32B 2603/00)</td>
</tr>
<tr>
<td>2607/00</td>
<td>Walls, panels</td>
</tr>
<tr>
<td>2607/02</td>
<td>Wall papers, wall coverings</td>
</tr>
</tbody>
</table>