

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING (NOTES omitted)

SHAPING

B32 LAYERED PRODUCTS

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

NOTES

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

WARNING

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

[B32B 3/24](#)

covered by

[B32B 3/266](#)

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

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

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

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

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

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

NOTE

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

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

NOTES

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

- 5/022 . . {Non-woven fabric}

- 5/024 . . {Woven fabric}
- 5/026 . . {Knitted fabric}
- 5/028 . . {Net structure, e.g. spaced apart filaments bonded at the crossing points}
- 5/04 . . characterised by a layer being specifically extensible by reason of its structure or arrangement {, e.g. by reason of the chemical nature of the fibres or filaments}
- 5/06 . . characterised by a fibrous {or filamentary} layer {mechanically connected, e.g. by needling, sewing, stitching, hydroentangling, hook and loop-type fasteners} to another layer, e.g. of fibres, of paper
- 5/08 . . the fibres or filaments of a layer being of different substances {, e.g. conjugate fibres, mixture of different fibres}
- 5/10 . . characterised by a fibrous {or filamentary} layer reinforced with filaments
- 5/12 . . characterised by the relative arrangement of fibres or filaments of {different layers, e.g. the fibres or filaments being parallel or perpendicular to each other}
- 5/14 . . characterised by a layer differing constitutionally or physically in different parts, e.g. denser near its faces
- 5/142 . . {Variation across the area of the layer}
- 5/145 . . {Variation across the thickness of the layer}
- 5/147 . . {by treatment of the layer}
- 5/16 . . characterised by features of a layer formed of particles, e.g. chips, powder {, granules (B32B 21/02 takes precedence; layers formed of natural mineral particles B32B 19/00; coated or impregnated particulate layers B32B 2255/04 or B32B 2260/025)}
- 5/18 . . characterised by features of a layer {of} foamed material
- 5/20 . . foamed in situ
- 5/22 . . characterised by the presence of two or more layers which {are next to each other and are fibrous, filamentary, formed of particles or foamed (B32B 19/06, B32B 19/048 B32B 19/047, B32B 29/005 - B32B 29/04 take precedence)}
- 5/24 . . one layer being a fibrous or filamentary layer
- 5/245 . . . {another layer next to it being a foam layer}
- 5/26 . . . another layer {next to it also being fibrous or filamentary (relative arrangement of fibres or filaments of different layers B32B 5/12; all layers being fibrous or filamentary B32B 2250/20; two or more impregnated fibrous or filamentary layers B32B 2260/023)}
- 5/28 . . . impregnated with or embedded in a plastic substance {(not used)}
- 5/30 . . one layer {being formed of particles, e.g. chips,} granules, powder
- 5/32 . . {at least two layers being foamed and next to each other (all layers being foamed B32B 2250/22)}

7/00

Layered products characterised by the relation between layers; Layered products characterised by the relative orientation of features between layers, or by the relative values of a measurable parameter between layers, i.e. products comprising layers having different physical, chemical or physicochemical properties; Layered products characterised by the interconnection of layers

7/02

- . Physical, chemical or physicochemical properties

WARNING

Group B32B 7/02 is impacted by reclassification into groups B32B 7/022, B32B 7/023, B32B 7/025, B32B 7/027, and B32B 7/028.

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

7/022

- . . Mechanical properties

WARNING

Groups B32B 7/022, B32B 7/023, B32B 7/025, B32B 7/027, and B32B 7/028 are incomplete pending reclassification of documents from group B32B 7/02.

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

7/023

- . . Optical properties

7/025

- . . Electric or magnetic properties

7/027

- . . Thermal properties

7/028

- . . . Heat-shrinkability

7/03

- . with respect to the orientation of features (direction of fibres or filaments B32B 5/12)

WARNING

Group B32B 7/03 is impacted by reclassification into group B32B 7/035.

Groups B32B 7/03 and B32B 7/035 should be considered in order to perform a complete search.

7/035

- . . using arrangements of stretched films, e.g. of mono-axially stretched films arranged alternately

WARNING

Group B32B 7/035 is incomplete pending reclassification of documents from group B32B 7/03.

Groups B32B 7/03 and B32B 7/035 should be considered in order to perform a complete search.

7/04

- . Interconnection of layers

7/05

- . . the layers not being connected over the whole surface, e.g. discontinuous connection or patterned connection (using interposed adhesives or bonding materials applied in spaced arrangements B32B 7/14)

7/06

- . . permitting easy separation

- 7/08 . . by mechanical means

WARNING

Group [B32B 7/08](#) is impacted by reclassification into group [B32B 7/09](#).

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

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

WARNING

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

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

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

Layered products characterised by particular substances used

NOTE

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

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

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

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

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

- 11/02 . with fibres or particles {being present as additives in the layer}
 11/04 . comprising such {bituminous or tarry substance as the main or only constituent of a layer, which is next to another layer of the same or of a different material ([B32B 17/06](#) takes precedence)}
 11/042 . . {of wood}
 11/044 . . {of natural rubber or synthetic rubber}
 11/046 . . {of synthetic resin}
 11/048 . . {of foam}
 11/06 . . of paper or cardboard
 11/08 . . of metal
 11/10 . next to a fibrous or filamentary layer
 11/12 . next to a particulate layer

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

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

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

- 15/01 . all layers being exclusively metallic {(making layered metal workpieces by pressure cladding [B23K 20/22](#); making coatings with a metallic material characterised by its composition [C23C 30/00](#))}
 15/011 . . {all layers being formed of iron alloys or steels}
 15/012 . . {one layer being formed of an iron alloy or steel, another layer being formed of aluminium or an aluminium alloy}
 15/013 . . {one layer being formed of an iron alloy or steel, another layer being formed of a metal other than iron or aluminium}
 15/015 . . . {the said other metal being copper or nickel or an alloy thereof}
 15/016 . . {all layers being formed of aluminium or aluminium alloys}
 15/017 . . {one layer being formed of aluminium or an aluminium alloy, another layer being formed of an alloy based on a non ferrous metal other than aluminium}
 15/018 . . {one layer being formed of a noble metal or a noble metal alloy}
 15/02 . {Layer formed of wires, e.g. mesh}
 15/04 . comprising metal as the main or only constituent of a layer, {which is next to another layer of the same or of a different material ([B32B 17/06](#) and [B32B 23/04](#) 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)}	17/10045	. . . . {at least one intermediate layer consisting of a glass sheet}
15/046	. . {of foam}	17/10055	. . . . {at least one intermediate air space (IG window units comprising two or more parallel glass panes E06B 3/66)}
15/06	. . of {natural rubber or synthetic} rubber	17/10064	. . . . {comprising at least two glass sheets, only one of which being an outer layer}
15/08	. . of synthetic resin	17/10073	. . . . {comprising at least two glass sheets, neither of which being an outer layer}
15/082	. . . comprising vinyl resins; comprising acrylic resins	17/10082	. . . . {Properties of the bulk of a glass sheet}
15/085	. . . comprising polyolefins	17/10091	. . . . {thermally hardened (chemical strengthening B32B 17/10137)}
15/088	. . . comprising polyamides	17/101	. . . . {having a predetermined coefficient of thermal expansion [CTE]}
15/09	. . . comprising polyesters	17/1011	. . . . {having predetermined tint or excitation purity}
15/092	. . . comprising epoxy resins	17/10119	. . . . {having a composition deviating from the basic composition of soda-lime glass, e.g. borosilicate}
15/095	. . . comprising polyurethanes	17/10128	. . . . {Treatment of at least one glass sheet (cutting of laminated glass C03B 33/076)}
15/098	. . . comprising condensation resins of aldehydes, e.g. with phenols, ureas or melamines	17/10137	. . . . {Chemical strengthening}
15/10	. . of wood	17/10146	. . . . {Face treatment, e.g. etching, grinding or sand blasting}
15/12	. . of paper or cardboard	17/10155	. . . . {Edge treatment, chamfering}
15/14	. next to a fibrous or filamentary layer	17/10165	. . . . {particular functional features of the laminated glazing}
15/16	. next to a particulate layer	17/10174	. . . . {Coatings of a metallic or dielectric material on a constituent layer of glass or polymer}
15/18	. comprising iron or steel {(B32B 15/011 , B32B 15/012 and B32B 15/013 take precedence)}	17/10183	. . . . {being not continuous, e.g. in edge regions}
15/20	. comprising aluminium or copper {(B32B 15/016 and B32B 15/017 take precedence)}	17/10192	. . . . {patterned in the form of columns or grids}
17/00	Layered products essentially comprising sheet glass, or glass, slag, or like fibres	17/10201	. . . . {Dielectric coatings}
17/02	. in the form of fibres or filaments	17/10211	. . . . {Doped dielectric layer, electrically conductive, e.g. $\text{SnO}_2\text{:F}$ }
17/04	. . bonded with or embedded in a plastic substance	17/1022	. . . . {Metallic coatings}
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)}	17/10229	. . . . {Metallic layers sandwiched by dielectric layers}
17/061	. . {metal}	17/10238	. . . . {in the form of particles}
17/062	. . {wood}	17/10247	. . . . {containing decorations or patterns for aesthetic reasons; metal wires for this purpose B32B 17/10422 }
17/063	. . {rubber}	17/10256	. . . . {created by printing techniques}
17/064	. . {synthetic resin (B32B 17/10 takes precedence)}	17/10266	. . . . {on glass pane}
17/065	. . {paper or cardboard}	17/10275	. . . . {on interlayer}
17/066	. . {foam}	17/10284	. . . . {on intermediate layer}
17/067	. . {fibres or filaments}	17/10293	. . . . {Edge features, e.g. inserts or holes}
17/068	. . {particulate matter}	17/10302	. . . . {Edge sealing}
17/069	. . {intumescent layers (B32B 17/10311 takes precedence)}	17/10311	. . . . {Intumescent layers for fire protection}
17/08	. . of cellulosic plastic substance {or gelatin}	17/10321	. . . . {containing liquid layers}
17/10	. . of synthetic resin {(producing optical elements from plastics B29D 11/00 ; constructional form of optical elements G02B)}	17/1033	. . . . {containing temporary protective coatings or layers}
	NOTES	17/10339	. . . . {Specific parts of the laminated glazing being colored or tinted (tinted glass B32B 17/1011 ; tinted interlayer B32B 17/10651)}
	1. In this group a layer of organic glass is not considered as a glass layer but as a synthetic resin layer;	17/10348	. . . . {comprising an obscuration band}
	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	17/10357	. . . . {comprising a tinted intermediate film}
17/10009	. . . {characterized by the number, the constitution or treatment of glass sheets}	17/10366	. . . . {Reinforcements of the laminated glazing against impact or intrusion; metal wires for this purpose B32B 17/10412 }
17/10018	. . . . {comprising only one glass sheet}	17/10376	. . . . {containing metal wires}
17/10027	. . . . {the glass sheet not being an outer layer}		
17/10036	. . . . {comprising two outer glass sheet}		

17/10385	. . . . .	{for Ohmic resistance heating (Ohmic resistance heating in general H05B 3/84)}	17/10678	. . . . .	{comprising UV absorbers or stabilizers, e.g. antioxidants}
17/10394	. . . . .	{Alarm wires (burglar alarms by breaking glass G08B 13/04)}	17/10688	. . . . .	{Adjustment of the adherence to the glass layers}
17/10403	. . . . .	{for radiation shielding (radiation shielding in general H05K 9/00)}	17/10697	. . . . .	{being cross-linked}
17/10412	. . . . .	{for reinforcement}	17/10706	. . . . .	{being photo-polymerized}
17/10422	. . . . .	{for aesthetic reasons}	17/10715	. . . . .	{containing polyether}
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)}	17/10724	. . . . .	{containing polyamide}
17/1044	. . . . .	{Invariable transmission}	17/10733	. . . . .	{containing epoxy}
17/10449	. . . . .	{Wavelength selective transmission (filters per se G02B 5/20)}	17/10743	. . . . .	{containing acrylate (co)polymers or salts thereof}
17/10458	. . . . .	{Polarization selective transmission (polarizing elements per se G02B 5/30)}	17/10752	. . . . .	{containing polycarbonate}
17/10467	. . . . .	{Variable transmission}	17/10761	. . . . .	{containing vinyl acetal}
17/10477	. . . . .	{thermochromic}	17/1077	. . . . .	{containing polyurethane}
17/10486	. . . . .	{photochromic}	17/10779	. . . . .	{containing polyester}
17/10495	. . . . .	{optoelectronic, i.e. optical valve}	17/10788	. . . . .	{containing ethylene vinylacetate}
17/10504	. . . . .	{liquid crystal layer (devices for the control of the intensity of the light based on liquid crystals G02F 1/13)}	17/10798	. . . . .	{containing silicone}
17/10513	. . . . .	{electrochromic layer (devices for the control of the intensity of the light based on electrochromic elements G02F 1/15)}	17/10807	. . . . .	{Making layered products containing glass and synthetic resin layers; apparatus therefor}
17/10522	. . . . .	{electrophoretic layer (devices for the control of the intensity of the light based on electrophoresis G02F 1/167)}	17/10816	. . . . .	{by pressing}
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)}	17/10825	. . . . .	{isostatic pressing, i.e. using non rigid pressure-exerting members against rigid parts (isostatic presses in general B30B 11/001)}
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)}	17/10834	. . . . .	{using a fluid}
17/1055	. . . . .	{characterized by the resin layer, i.e. interlayer}	17/10844	. . . . .	{using a membrane between the layered product and the fluid}
17/10559	. . . . .	{Shape of the cross-section}	17/10853	. . . . .	{the membrane being bag-shaped}
17/10568	. . . . .	{varying in thickness}	17/10862	. . . . .	{using pressing-rolls}
17/10577	. . . . .	{Surface roughness}	17/10871	. . . . .	{in combination with particular heat treatment}
17/10587	. . . . .	{created by embossing}	17/1088	. . . . .	{by superposing a plurality of layered products}
17/10596	. . . . .	{created by melt fracture}	17/10889	. . . . .	{shaping the sheets, e.g. by using a mould (B32B 17/10816 takes precedence)}
17/10605	. . . . .	{Type of plasticizer}	17/10899	. . . . .	{by introducing interlayers of synthetic resin}
17/10614	. . . . .	{comprising particulate matter for purposes other than dyeing}	17/10908	. . . . .	{in liquid form}
17/10623	. . . . .	{Whitening agents reflecting visible light}	17/10917	. . . . .	{between two pre-positioned glass layers (spacing elements for window units comprising two or more parallel panes E06B 3/663)}
17/10633	. . . . .	{Infrared radiation absorbing or reflecting agents}	17/10926	. . . . .	{by spraying (spraying in general B05)}
17/10642	. . . . .	{Thermally conductive agents}	17/10935	. . . . .	{as a preformed layer, e.g. formed by extrusion}
17/10651	. . . . .	{comprising colorants, e.g. dyes or pigments}	17/10944	. . . . .	{in powder form}
17/1066	. . . . .	{imparting a tint in certain regions only, i.e. shade band}	17/10954	. . . . .	{by using an aligning laminating device}
17/10669	. . . . .	{Luminescent agents (luminescent materials C09K 11/00 , optical brightening agents C08K 5/0041)}	17/10963	. . . . .	{specially adapted for repairing the layered products}
			17/10972	. . . . .	{Degassing during the lamination (B32B 17/10816 takes precedence; during molding B29C 37/006)}
			17/10981	. . . . .	{Pre-treatment of the layers}
			17/1099	. . . . .	{After-treatment of the layered product, e.g. cooling}
			18/00		Layered products essentially comprising ceramics, e.g. refractory products
					NOTE
					In group B32B 18/00 , from 01-10-2008 onwards, features relating to interlayers, additional compositional information or further

B32B 18/00

(continued)

processing are indexed with codes chosen from
[C04B 2237/00](#) - [C04B 2237/88](#)

19/00 Layered products comprising {a layer of} natural mineral fibres or particles, e.g. asbestos, mica

- 19/02 . {the layer of fibres or particles being impregnated or} embedded in a plastic substance
- 19/04 . next to another layer {of the same or of a different material ([B32B 17/067](#) takes precedence)}
- 19/041 . . {of metal}
- 19/042 . . {of wood}
- 19/043 . . {of natural rubber or synthetic rubber}
- 19/045 . . {of synthetic resin}
- 19/046 . . {of paper or cardboard}
- 19/047 . . {of foam}
- 19/048 . . {made of particles}
- 19/06 . next to a fibrous or filamentary layer
- 19/08 . comprising asbestos

21/00 Layered products comprising {a layer of} wood, e.g. wood board, veneer, wood particle board

- 21/02 . {the layer being formed} of fibres, chips, or particles {, e.g. MDF, HDF, OSB, chipboard, particle board, hardboard}
- 21/04 . comprising wood as the main or only constituent of a layer {, which is next to another layer of the same or of a different material ([B32B 17/062](#) and [B32B 23/044](#) take precedence; next to a layer of a particular substance [B32B 9/042](#); next to a bituminous or tarry layer [B32B 11/042](#); next to a water setting substance layer [B32B 13/10](#); next to a metal layer [B32B 15/10](#); next to a layer formed of natural mineral fibres or particles [B32B 19/042](#))}
- 21/042 . . {of wood ([B32B 21/13](#) takes precedence)}
- 21/045 . . {of natural rubber or synthetic rubber}
- 21/047 . . {of foam}
- 21/06 . . of paper or cardboard
- 21/08 . . of synthetic resin
- 21/10 . Next to a fibrous or filamentary layer
- 21/12 . next to a particulate layer
- 21/13 . all layers being exclusively wood
- 21/14 . comprising wood board or veneer

23/00 Layered products comprising {a layer of} cellulosic plastic substances {, i.e. substances obtained by chemical modification of cellulose, e.g. cellulose ethers, cellulose esters, viscose}

- 23/02 . in the form of fibres or filaments {(not used)}
- 23/04 . comprising such {cellulosic plastic substance as the main or only constituent of a layer, which is next to another layer of the same or of a different material ([B32B 17/08](#) takes precedence)}
- 23/042 . . {of metal}
- 23/044 . . {of wood}
- 23/046 . . {of natural rubber or synthetic rubber (all layers being polymeric [B32B 2250/24](#))}
- 23/048 . . {of foam}
- 23/06 . . of paper or cardboard
- 23/08 . . of synthetic resin {(all layers being polymeric [B32B 2250/24](#))}
- 23/10 . next to a fibrous or filamentary layer
- 23/12 . next to a particulate layer
- 23/14 . characterised by containing special compounding ingredients
- 23/16 . . Modifying agents

23/18

23/20

23/22

- . . Fillers
- . comprising esters
- . comprising ethers

25/00

Layered products comprising {a layer of} natural or synthetic rubber {([B32B 5/02](#), [B32B 5/16](#), [B32B 5/18](#) take precedence; thermoplastic elastomer [B32B 2274/00](#))}

25/02

25/04

- . with fibres or particles {being present as additives in the layer}
- . 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

25/045

25/047

25/06

25/08

25/10

25/12

25/14

25/16

25/18

25/20

- . . {of natural rubber or synthetic rubber (all layers being made of natural or synthetic rubber [B32B 2250/248](#))}
- . . {of foam}
- . . {of particles}
- . . of paper or cardboard
- . . of synthetic resin {(all layers being polymeric [B32B 2250/24](#))}
- . next to a fibrous or filamentary layer
- . comprising natural rubber
- . comprising {synthetic rubber copolymers ([B32B 25/18](#) and [B32B 25/20](#) take precedence)}
- . comprising polydienes {homopolymers} or polyhalodienes {homopolymers ([B32B 25/12](#) takes precedence)}
- . comprising butyl or halobutyl rubber
- . comprising silicone rubber

27/00

Layered products comprising {a layer of} synthetic resin {([B32B 5/02](#), [B32B 5/16](#), [B32B 5/18](#) take precedence; thermoplastic elastomer [B32B 2274/00](#))}

NOTE

This group covers all synthetic resins except those covered by [B32B 25/00](#) or [B32B 23/00](#)

27/02

27/04

27/06

27/065

- . in the form of fibres or filaments {(not used)}
- . as impregnant, bonding, or embedding substance {(not used)}
- . 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](#))}
- . . {of foam}

- 27/08 . . of synthetic resin {[\(all layers being polymeric, made of polymers belonging to those covered by B32B 27/32, by B32B 27/36, or by B32B 27/30 and B32B 27/32, B32B 2250/24 - B32B 2250/246\)](#)}
- 27/10 . . of paper or cardboard
- 27/12 . next to a fibrous or filamentary layer
- 27/14 . next to a particulate layer
- 27/16 . specially treated, e.g. irradiated {[\(B32B 2255/10 takes precedence\)](#)}
- 27/18 . characterised by the use of special additives
- 27/20 . . using fillers, pigments, thixotroping agents
- 27/205 . . . {the fillers creating voids or cavities, e.g. by stretching}
- 27/22 . . using plasticisers
- 27/24 . . using solvents or swelling agents
- 27/26 . . using curing agents
- 27/28 . comprising synthetic resins not wholly covered by any one of the sub-groups [{B32B 27/30 - B32B 27/42}](#)
- 27/281 . . {comprising polyimides}
- 27/283 . . {comprising polysiloxanes}
- 27/285 . . {comprising polyethers}
- 27/286 . . {comprising polysulphones; polysulfides}
- 27/288 . . {comprising polyketones}
- 27/30 . comprising vinyl {(co)polymers; comprising acrylic (co)polymers}
- 27/302 . . {comprising aromatic vinyl (co)polymers, e.g. styrenic (co)polymers}
- 27/304 . . {comprising vinyl halide (co)polymers, e.g. PVC, PVDC, PVF, PVDF}
- 27/306 . . {comprising vinyl acetate or vinyl alcohol (co)polymers}
- 27/308 . . {comprising acrylic (co)polymers}
- 27/32 . comprising polyolefins {[\(B32B 27/30 takes precedence\)](#)}
- 27/322 . . {comprising halogenated polyolefins, e.g. PTFE}
- 27/325 . . {comprising polycycloolefins}
- 27/327 . . {comprising polyolefins obtained by a metallocene or single-site catalyst}
- 27/34 . comprising polyamides
- 27/36 . comprising polyesters
- 27/365 . . {comprising polycarbonates}
- 27/38 . comprising epoxy resins
- 27/40 . comprising polyurethanes
- 27/42 . comprising condensation resins of aldehydes, e.g. with phenols, ureas or melamines
- 29/00 Layered products comprising {a layer of} paper or cardboard**
- 29/002 . {as the main or only constituent of a layer, which is next to another layer of the same or of a different material [\(B32B 17/065 takes precedence; next to a layer of a particular substance B32B 9/06; next to a bituminous or tarry layer B32B 11/06; next to a water-setting substance layer B32B 13/08; next to a metal layer B32B 15/12; next to a layer formed of natural mineral fibres or particles B32B 19/046; next to a wood layer B32B 21/06; next to a cellulosic plastic layer B32B 23/06; next to a natural or synthetic rubber layer B32B 25/06; next to a synthetic resin layer B32B 27/10\)](#)}

- 29/005 . . {next to another layer of paper or cardboard layer [\(all layers being made of paper or paperboard B32B 2250/26\)](#)}
- 29/007 . . {next to a foam layer}
- 29/02 . next to a fibrous or filamentary layer
- 29/04 . next to a particulate layer
- 29/06 . specially treated, e.g. surfaced, parchmented {[\(B32B 2255/12, B32B 2260/028 take precedence\)](#)}
- 29/08 . Corrugated paper or cardboard

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

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}
- 2037/0061 . . {the apparatus being an office laminator}
- 2037/0069 . . {the apparatus being originally designed for another function, e.g. printer, photocopier}
- 37/0076 . {characterised in that the layers are not bonded on the totality of their surfaces}
- 37/0084 . . {Point bonding}

2037/0092	. {in which absence of adhesives is explicitly presented as an advantage}	37/153	. . . {at least one layer is extruded and immediately laminated while in semi-molten state}
37/02	. characterised by a sequence of laminating steps, e.g. by adding new layers at consecutive laminating stations	37/156	. . . {at least one layer is calendered and immediately laminated}
37/025	. . {Transfer laminating}	37/16	. . with all layers existing as coherent layers before laminating
37/04	. characterised by the partial melting of at least one layer	37/18	. . . involving the assembly of discrete sheets or panels only
37/06	. characterised by the heating method	37/182	. . . . {one or more of the layers being plastic}
37/065	. . {resulting in the laminate being partially bonded (B32B 37/0076 takes precedence)}	37/185	. . . . . {Laminating sheets, panels or inserts between two discrete plastic layers}
37/08	. characterised by the cooling method	37/187	. . . . {the layers being placed in a carrier before going through the lamination process}
37/085	. . {Quenching}	37/20	. . . involving the assembly of continuous webs only
37/10	. characterised by the pressing technique, e.g. using action of vacuum or fluid pressure	37/203	. . . . {One or more of the layers being plastic}
37/1009	. . {using vacuum and fluid pressure}	37/206	. . . . . {Laminating a continuous layer between two continuous plastic layers}
37/1018	. . {using only vacuum}	37/22	. . . involving the assembly of both discrete and continuous layers
37/1027	. . {Pressing using at least one press band}	37/223	. . . . {One or more of the layers being plastic}
37/1036	. . . {Pressing between one press band and a cylinder}	37/226	. . . . . {Laminating sheets, panels or inserts between two continuous plastic layers}
37/1045	. . {Intermittent pressing, e.g. by oscillating or reciprocating motion of the pressing means (B32B 37/0076 takes precedence)}	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)
37/1054	. . {Regulating the dimensions of the laminate, e.g. by adjusting the nip or platen gap}	2037/243	. . . {Coating}
2037/1063	. . {using an electrostatic force}	2037/246	. . . {Vapour deposition}
2037/1072	. . {using a fluid jet}	37/26	. . with at least one layer which influences the bonding during the lamination process, e.g. release layers or pressure equalising layers
2037/1081	. . {using a magnetic force}	2037/262	. . . {Partition plates or sheets for separating several laminates pressed simultaneously}
2037/109	. . {using a squeegee}	2037/264	. . . {Pressure equalizing layers}
37/12	. characterised by using adhesives	2037/266	. . . {Cushioning layers}
37/1207	. . {Heat-activated adhesive (laminating by the partial melting of layers to form the bond B32B 37/04 takes precedence)}	2037/268	. . . {Release layers}
2037/1215	. . . {Hot-melt adhesive}	37/28	. involving assembly of non-flat intermediate products which are flattened at a later step, e.g. tubes
2037/1223	. . . . {film-shaped}	37/30	. Partial laminating
2037/123	. . . . {net-shaped}	38/00	Ancillary operations in connection with laminating processes
2037/1238	. . . {in the form of powder}		NOTE
2037/1246	. . {Other adhesives}		{In this group, the following expression is used with the meaning indicated:
2037/1253	. . . {curable}		• "in connection with laminating processes" means ancillary operations are carried out either
2037/1261	. . . . {moisture curable}		a. as steps of the lamination processes, or
2037/1269	. . . {multi-component adhesive}		b. in line with the lamination processes, just before or immediately after.}
2037/1276	. . . {water-based adhesive}	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)}
37/1284	. . {Application of adhesive}		
37/1292	. . . {selectively, e.g. in stripes, in patterns (B32B 37/0076 takes precedence)}		
37/14	. characterised by the properties of the layers		
37/142	. . {Laminating of sheets, panels or inserts, e.g. stiffeners, by wrapping in at least one outer layer, or inserting into a preformed pocket}		
37/144	. . {using layers with different mechanical or chemical conditions or properties, e.g. layers with different thermal shrinkage, layers under tension during bonding (constructional features for tensioning B32B 38/1825 takes precedence)}		
37/146	. . {whereby one or more of the layers is a honeycomb structure}		
2037/148	. . {whereby layers material is selected in order to facilitate recycling of the laminate}		
37/15	. . with at least one layer being manufactured and immediately laminated before reaching its stable state, e.g. in which a layer is extruded and laminated while in semi-molten state		

- 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

- 2038/042 . . {Punching}
 2038/045 . . {Slitting}
 2038/047 . . {Perforating}
 38/06 . . Embossing
 38/08 . . Impregnating
 38/10 . . Removing layers, or parts of layers, mechanically or chemically
 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

- 2250/40 . Symmetrical or sandwich layers, e.g. ABA, ABCBA, ABCCBA
- 2250/42 . Alternating layers, e.g. ABAB(C), AABBAABB(C)
- 2250/44 . 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 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
- 2255/062 . . metal layer being a foamed layer
- 2255/08 . 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
- 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 fibers
- 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 . 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 particles 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

2264/12	. Mixture of at least two particles made of different materials
2266/00	Composition of foam
2266/02	. Organic
2266/0207	. . Materials belonging to B32B 25/00
2266/0214	. . Materials belonging to B32B 27/00
2266/0221	. . . Vinyl resin
2266/0228	. . . . Aromatic vinyl resin, e.g. styrenic (co)polymers
2266/0235	. . . . Vinyl halide, e.g. PVC, PVDC, PVF, PVDF
2266/0242	. . . Acrylic resin
2266/025	. . . Polyolefin (vinyl or acrylic copolymers B32B 2266/0221, B32B 2266/0242)
2266/0257	. . . Polyamide
2266/0264	. . . Polyester
2266/0271	. . . Epoxy resin
2266/0278	. . . Polyurethane
2266/0285	. . . Condensation resins of aldehydes, e.g. with phenols, ureas, melamines
2266/0292	. . . Thermoplastic elastomer
2266/031	. . Bituminous or tarry material
2266/04	. Inorganic
2266/045	. . Metal
2266/049	. . Water-setting material, e.g. concrete, plaster or asbestos cement
2266/053	. . Mineral element, e.g. asbestos or mica
2266/057	. . Silicon-containing material, e.g. glass
2266/06	. Open cell foam
2266/08	. Closed cell foam
2266/10	. characterised by the foam pores
2266/102	. . Nanopores, i.e. with average diameter smaller than 0.1 µm
2266/104	. . Micropores, i.e. with average diameter in the range from 0.1 µm to 0.1 mm
2266/106	. . Unimodal pore distribution
2266/108	. . Bimodal pore distribution
2266/12	. Gel
2266/122	. . Hydrogel, i.e. a gel containing an aqueous composition
2266/124	. . Organogel, i.e. a gel containing an organic composition
2266/126	. . Aerogel, i.e. a supercritically dried gel
2266/128	. . Xerogel, i.e. an air dried gel
2266/14	. Adhesive foam
2270/00	Resin or rubber layer containing a blend of at least two different polymers
2272/00	Resin or rubber layer comprising scrap, waste or recycling material
2274/00	Thermoplastic elastomer material (thermoplastic elastomer fibres B32B 2262/0215 , thermoplastic elastomer particles B32B 2264/0221 , thermoplastic elastomer foam B32B 2266/0292)
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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
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
<u>Condition, form, state or properties of the layers or laminate</u>	
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	. . Iridescent, 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
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

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

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

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

2318/00	Mineral based
2318/02	. Oil
2318/04	. Stone

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

Organic materials used for the layers, laminate or apparatus components

2323/00	Polyalkenes
2323/04	. Polyethylene
2323/043	. . HDPE, i.e. high density polyethylene
2323/046	. . LDPE, i.e. low density polyethylene
2323/10	. Polypropylene
2323/16	. EPDM, i.e. ethylene propylene diene monomer

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

2327/00	Polyvinylhalogenides
2327/06	. PVC, i.e. polyvinylchloride
2327/12	. containing fluorine
2327/18	. . PTFE, i.e. polytetrafluoroethylene

2329/00 Polyvinylalcohols, polyvinylethers, polyvinylaldehydes, polyvinylketones or polyvinylketals

2329/04	. Polyvinylalcohol
2329/06	. PVB, i.e. polyvinylbutyral

2331/00	Polyvinylesters
2331/04	. Polymers of vinyl acetate, e.g. PVA

2333/00 Polymers of unsaturated acids or derivatives thereof

2333/04	. Polymers of esters
2333/08	. . Polymers of acrylic acid esters, e.g. PMA, i.e. polymethylacrylate
2333/12	. . Polymers of methacrylic acid esters, e.g. PMMA, i.e. polymethylmethacrylate

2355/00 Specific polymers obtained by polymerisation reactions only involving carbon-to-carbon unsaturated bonds, not provided for in a single one of index codes [B32B 2323/00](#) - [B32B 2333/00](#)

2311/00 Metals, their alloys or their compounds

NOTE

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

2311/005	. Shape memory alloys
2311/02	. Noble metals
2311/04	. . Gold
2311/06	. . Platinum
2311/08	. . Silver
2311/09	. . Palladium
2311/10	. Mercury
2311/12	. Copper
2311/14	. Lead
2311/16	. Tin
2311/18	. Titanium
2311/20	. Zinc
2311/22	. Nickel or cobalt
2311/24	. Aluminium
2311/30	. Iron, e.g. steel

Inorganic materials used for the layers, laminate or apparatus components

2313/00 Elements other than metals

2313/02	. Boron
2313/04	. Carbon

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

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

2317/00 Animal or vegetable based

2317/02	. Cork
2317/04	. Linoleum

2355/02	• ABS polymers, i.e. acrylonitrile-butadiene-styrene polymers
2361/00	Phenoplast, aminoplast
2363/00	Epoxy resins
2367/00	Polyesters, e.g. PET, i.e. polyethylene terephthalate
2369/00	Polycarbonates
2371/00	Polyethers, e.g. PEEK, i.e. polyether-etherketone; PEK, i.e. polyetherketone
2375/00	Polyureas; Polyurethanes
2377/00	Polyamides
2379/00	Other polymers having nitrogen, with or without oxygen or carbon only, in the main chain
2379/08	• Polyimides
2383/00	Polysiloxanes
2386/00	Specific polymers obtained by polycondensation or polyaddition not provided for in a single one of index codes B32B 2363/00 - B32B 2383/00
2391/00	Waxes
2395/00	Bituminous material, e.g. tar, asphalt
2398/00	Unspecified macromolecular compounds
2398/10	• Thermosetting resins
2398/20	• Thermoplastics

Particular articles**NOTE**

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

2405/00	Adhesive articles, e.g. adhesive tapes (labels B32B 2519/00)
2410/00	Agriculture-related articles
2413/00	Belts (conveyor belts B32B 2433/02; drive belts B32B 2433/04)
2419/00	Buildings or parts thereof (walls, panels B32B 2607/00)
2419/02	• Bricks
2419/04	• Tiles for floors or walls (tiles for roofs B32B 2419/06)
2419/06	• Roofs, roof membranes
2425/00	Cards, e.g. identity cards, credit cards
2429/00	Carriers for sound or information
2429/02	• Records or discs
2432/00	Cleaning articles, e.g. mops, wipes (personal care B32B 2555/00)
2433/00	Closed loop articles
2433/02	• Conveyor belts
2433/04	• Driving belts
2435/00	Closures, end caps, stoppers
2435/02	• for containers
2437/00	Clothing (anti-ballistic clothing B32B 2571/02)
2437/02	• Gloves, shoes

2437/04	• Caps, helmets
2439/00	Containers; Receptacles (closures therefor B32B 2435/00)
2439/02	• Open containers
2439/06	• • Bags, sacks, sachets
2439/40	• Closed containers
2439/46	• • Bags
2439/60	• • Bottles
2439/62	• • Boxes, cartons, cases
2439/66	• • Cans, tins
2439/70	• Food packaging
2439/80	• Medical packaging
2451/00	Decorative or ornamental articles (wall paper B32B 2607/02)
2457/00	Electrical equipment
2457/04	• Insulators
2457/08	• PCBs, i.e. printed circuit boards
2457/10	• Batteries
2457/12	• Photovoltaic modules
2457/14	• Semiconductor wafers
2457/16	• Capacitors
2457/18	• Fuel cells
2457/20	• Displays, e.g. liquid crystal displays, plasma displays
2457/202	• • LCD, i.e. liquid crystal displays
2457/204	• • Plasma displays
2457/206	• • Organic displays, e.g. OLED
2457/208	• • Touch screens
2459/00	Nets, e.g. camouflage nets
2471/00	Floor coverings (B32B 2419/04 takes precedence)
2471/02	• Carpets
2471/04	• Mats
2475/00	Frictional elements
2479/00	Furniture (upholstery B32B 2601/00)
2509/00	Household appliances
2509/10	• Refrigerators or refrigerating equipment
2519/00	Labels, badges
2519/02	• RFID tags
2535/00	Medical equipment, e.g. bandage, prostheses, catheter (medical patches B32B 2556/00)
2551/00	Optical elements
2551/08	• Mirrors
2553/00	Packaging equipment or accessories not otherwise provided for
2553/02	• Shock absorbing
2553/023	• • for use in loose form, e.g. dunnage
2553/026	• • Bubble films
2554/00	Paper of special types, e.g. banknotes
2555/00	Personal care
2555/02	• Diapers or napkins
2556/00	Patches, e.g. medical patches, repair patches
2559/00	Photographic equipment or accessories
2571/00	Protective equipment

- 2571/02 . defensive, e.g. armour plates, anti-ballistic clothing
(camouflage nets [B32B 2459/00](#))
- 2581/00** **Seals; Sealing equipment; Gaskets**
- 2590/00** **Signboards, advertising panels, road signs**
- 2597/00** **Tubular articles, e.g. hoses, pipes**
- 2601/00** **Upholstery**
- 2603/00** **Vanes, blades, propellers, rotors with blades**
- 2605/00** **Vehicles**
 - 2605/003 . Interior finishings
 - 2605/006 . Transparent parts made from plastic material, e.g. windows
 - 2605/08 . Cars
 - 2605/10 . Trains
 - 2605/12 . Ships
 - 2605/16 . Submarines
 - 2605/18 . Aircraft ([blades, propellers B32B 2603/00](#))
- 2607/00** **Walls, panels**
 - 2607/02 . Wall papers, wall coverings