

B32B

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

Definition statement

This place covers:

- Layered products characterised by the structure or materials of the layers, including products formed from separate layers, wherein the layers lose their individuality in the final product, e.g. products formed from a plurality of fabrics that are compressed into a unitary mat, or consolidated into a single layer after impregnation with a resin.
- Methods or apparatus for making layered products; methods or apparatus for treating layers or layered products either preliminary to or subsequent to their manufacture, when the treatment is in connection with said manufacture.

Relationships with other classification places

Classification of layered products is provided for in many technical areas, 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, any layered product that specifies relevant useful information is classified in this subclass even though it may also be classified in other classes.

Classification in other areas should be made in the following situations:

- If the process or apparatus used in, or used in connection with, the production or treatment of any product is fully classifiable in a single other class or subclass for processes or apparatuses, e.g. [B05](#), [B29C](#), [B44D](#), [C08J](#), or [C23](#), then classification should be made in the appropriate process or apparatus area.
- If a composition or preparation or treatment thereof is not essentially restricted to a layered product, then classification should be made in the appropriate composition, preparation, or treatment area.
- Adhesive tape, film or sheet comprising a single layer substrate, an adhesive coating not constituting a layer (see glossary of terms below), and a single layer liner or sheet should be classified only in the appropriate areas, e.g. [C09J](#).
- If a product is fully classifiable in another area such as [A61F 13/00](#) (e.g. absorbents), [C09J 7/00](#) (e.g. adhesive tapes), [C22C 26/00](#), [C22C 29/00](#), and [C22C 32/00](#) (e.g. Alloys), [H05K](#) (e.g. Printed circuits) or [G02B](#) [excluding [G02B 6/00](#)] (e.g. Optical elements), then classification should be made in the appropriate other area.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Wearing apparel	A41
Outerwear, protective garments	A41D
Headwear	A42B
Footwear	A43B
Furniture; Domestic articles or appliances	A47
Household or table equipment	A47G
Floor fabrics	A47G 27/00
Implements for cleaning, e.g. cloths, pads, sponges, mops	A47L 13/00
Surgery, e.g. instruments or drapes	A61B

Diapers and absorbent articles	A61F 13/00
Containers for medical purposes	A61J 1/00
Chemical aspects of bandages, dressings, absorbent pads or surgical articles	A61L 15/00
Sport articles	A63B , A63C
Separation filters	B01D
Processes for applying liquids or other fluent materials to surfaces	B05D
Working or preserving wood	B27
Manufacturing articles made of fibres or particles of wood	B27N
Working cement, clay or stone	B28
Shaping or joining of plastics	B29C
Producing particular articles from plastic	B29D
Mechanical working or deformation of paper or cardboard	B31F
Printing, marking or copying	B41M
Printed matter of special format, e.g. cards, banknotes or identity cards	B42D 15/00
Decorative products	B44C
Fuel tanks	B60K 15/00
Vehicle fittings, vehicle parts	B60R
Ships or other waterborne vessels	B63B
Airplane fuselage or wings	B64C 1/00 , B64C 3/00
Containers; Packages	B65D
Surface treatment of glass, e.g. coating	C03C
Cement compositions; Ceramics	C04B
Joining ceramic layers with other ceramic layers or layers of other materials by heating	C04B 37/00
Manufacture of polymeric films or sheets	C08J 5/00
Coating of polymeric articles	C08J 7/00
Production of macromolecular porous or cellular articles	C08J 9/00
Compositions of macromolecular compounds	C08L
Coating compositions	C09D
Adhesive processes	C09J 5/00
Adhesive tapes, films or sheets	C09J 7/00
Fireproofing materials	C09K 21/00
Coatings on or with metals	C23C
Electrolytic deposition of metals	C25D
Woven materials	D03D
Non-woven materials	D04H
Treatment of fabrics	D06M
Polymeric coatings on fibrous web	D06N
Impregnation or coating of paper; special paper	D21H

General building structures; insulation or protection	E04B
Structural elements; building materials	E04C
Roof coverings	E04D
Wall coverings	E04F 13/00
Floor coverings	E04F 15/00
Vibration damping, springs	F16F
Rigid pipes	F16L 9/00
Hoses or flexible pipes	F16L 11/00
Thermal insulation	F16L 59/00
Optical elements	G02B
Digital marking record carriers, e.g. credit cards	G06K 19/00
Labels or advertisements	G09F
Sound insulation	G10K 11/00
Magnetic recording	G11B 5/00
Optical recording	G11B 7/00
Batteries, e.g. separators	H01M
Printed circuits	H05K
Etched metallic pattern on the surface of a printed circuit board	H05K 1/00

Special rules of classification

Classification guidance:

- If the invention is characterised by several aspects, e.g. surface structure and/or material of the layer(s) or production method, several classification symbols are given.
- Layers with mixtures of essential materials covered by two or more subgroups are classified in each appropriate subgroup.
- When layer materials are generally too defined or too many possibilities are disclosed, then subgroups corresponding to the materials indicated in the examples are allocated. In the absence of examples, the pertinent more general main groups or subgroups are allocated.
- If a layered product is characterised by the way it is produced and not by its structure or composition, the production method should be classified in groups [B32B 37/00](#) or [B32B 38/00](#), or in other subclasses, e.g. [B29C](#), for example in groups [B29C 45/16](#) or [B29C 48/18](#).
- Coating operations are classified in [B32B 2037/243](#) as long as a lamination process as defined in [B32B 37/00](#) is present.

Allocation of Indexing symbols:

The following Orthogonal Indexing Symbols are mandatory in this subclass:

- [B32B 2250/00](#) - [B32B 2274/00](#), which are used in connection with [B32B 1/00](#) - [B32B 15/00](#) (with the exception of [B32B 15/01](#)), [B32B 17/00](#) and [B32B 19/00](#) - [B32B 29/00](#);
- [B32B 2305/00](#) and [B32B 2309/00](#) - [B32B 2398/00](#), which are used in connection with [B32B 17/10005](#) - [B32B 17/1099](#) and [B32B 33/00](#) - [B32B 43/00](#);
- [B32B 2307/00](#) (properties) and [B32B 2405/00](#) - [B32B 2607/00](#) (particular articles), which are used in connection with the whole subclass [B32B](#) with the exception of [B32B 15/01](#) and [B32B 18/00](#).

Breakdown Indexing symbols, e.g. [B32B 2037/0061](#) or [B32B 2038/0016](#), are used for additional classification in [B32B 37/00](#) - [B32B 43/00](#).

Combination Sets (C-Sets):

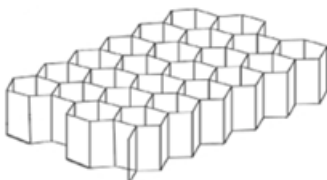

In this subclass, C-Sets classification is applied to the following groups, listed in the table below, if the document discloses a pertinent combination of technical features that cannot be covered by the allocation of a single symbol. The fourth column of the table indicates the place where the detailed information about the C-Sets construction and the associated syntax rules can be found, in the definition section "Special rules of classification".

C-Sets ID	Base Symbols	Subsequent Symbols	C-Sets Formula; Location of C-Sets Rules
#B32Ba	B32B 17/10005	B32B 2319/00 – B32B 2386/00	(B32B 17/10005 , B32B 2319/00 – B32B 2386/00), laminated safety glass structure comprising a polymeric intermediate layer sandwiched between interlayers, and the polymeric material of the polymeric intermediate layer; see B32B 17/10005 .

The specific C-Sets rule is located at only one place of the base symbol in the section "Special rules of classification" in the definition. If the C-Sets rule is applicable to all groups of a subclass, it is located at the subclass level only. If the same C-Sets rule is applicable to multiple groups or subgroups within the same subclass, the C-Sets rule is placed at the highest group or subgroup of the multiple groups.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Adhesive	Substance applied in any state or in any manner that has bonding properties.
Coating	A coating in the sense of B32B is obtained by processes such as: (A) Brushing, flowing, spraying, dipping or doctor blading a solution or dispersion; (B) Sputtering, vapour/plasma/vacuum depositing; (C) Deposition of loose particles or fibres, e.g. by sprinkling, flocking, air laying; and (D) Deposition of fibres/pulp/particles in a wet slurry as in paper making (wet laying). Coatings are not considered defined B32B layers (see definition of Layer below).
Discontinuous layer	<p>A layer formed of separate pieces of material having both a physical discontinuity and a continuous path through each of its major directions (e.g. x and y, or length and width). Examples include a grating, a honeycomb, a frame, or separate pieces of material that are juxtaposed side-by-side. Examples of discontinuous layers are as follows:</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Figure A</p> </div> <div style="text-align: center;">  <p>Figure B</p> </div> </div>

Embedded layer	A layer that is set, surrounded, enveloped, or enclosed in an impregnating material, mass of plastic or similar substance that penetrates and/or lies on side edges of the layer.
Fibrous layer	Random assembly of fibres or filaments, usually of limited length, e.g. felt or fleece, the fibres being interengaged or connected, e.g. by adhesive.
Filamentary layer	Layer of threads, filaments, tapes or ribbons of any substance (including wires) of more or less unlimited length secured together; it may be, e.g. woven, knitted, braided, netted, spunbonded, or formed of threads or filaments crossed or laid side by side and bonded together.
Film	Within B32B , a film that is formed by extrusion or moulding or that is formed as a self-supporting transfer coating is a layer. A film that is formed in-situ by coating is not considered to be a layer within the scope of B32B .
Impregnated layer	A layer that is at least partially filled by a material and has been obtained by permeating or saturating at least a part of the layer with a liquid substance, e.g. dispersions, uncured polymer, melted or molten polymer, glass, metals, settable compositions.
Juxtaposed side-by-side	In direct contact or with a bonding material, e.g. adhesive or mortar, in between.
Laminating	Laminating is the action of combining previously unconnected, but possibly laid up, layers to become one product whose layers will remain together.
Lay-up	Lay-up is the action of combining separate layers, one on top of the other, in order to form a half-product for entering the laminating process.
Layer	Sheet, strip or stratum having a small thickness relative to its other dimensions. It may be deformed out of the flat plane to form a three-dimensional shape; 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 or a honeycomb. It may or may not be in complete contact with the next layer, e.g. a corrugated layer against a flat layer. The layer has to have one of the following forms: (1) Preformed layer, i.e. taking the form of a layer at some stage before being brought into combination with another layer; (2) Layer formed in-situ, i.e. taking the form of a layer while or after being brought into combination with another layer. Additional explanations of (1) Preformed layer and (2) Layer formed in-situ are located following the Glossary of Terms. In B32B , with the exception of B32B 15/01 - B32B 15/018 and interlayers/composite interlayers proper for B32B 17/10005 - B32B 17/1099 , the following is excluded from the definition of a layer: A coating formed directly onto a substrate layer, which at the moment of its contact with the substrate does not have the form of a layer (unless the coating falls within the definition of (2) Layer formed in-situ as further explained below after the Glossary of Terms).

Layered product	Product comprising at least two superposed layers secured together; the term "secured" is to be interpreted broadly to include any method of uniting or securing the layers, e.g. needling, stitching, gluing, nailing, dovetailing, welding or the interposition of an adhesive or adhesive-impregnated support. Products wherein layers are obtained by co-extrusion or by simultaneous injection moulding of materials are included in this definition. It also encompasses two layers of ceramic powders that are pressed together in a press. 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 that is stripped off when the panel is placed in its position of use. It is normally of substantially uniform thickness overall, i.e. ignoring local variations such as are produced by a corrugated face layer. The layered product may be in the form of an article, e.g. a container.
Next to	With no other layer being interposed.
Partial laminating	Partial laminating occurs (1) 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, or (2) when two coextensive layers are bonded on only part of their facing surfaces.
Particulate layer	Preformed layer of particles, e.g. chips, powder, granules, flakes, in which the particles are bonded together, e.g. sintered or by a binder.
Spaced fabric	A fabric that includes at least two outer fabrics joined together by connecting yarns that create an intermediate gap between the outer fabrics, to form a three-dimensional fabric. The spaced fabric can be a single layer or multiple layers. (1) A spaced fabric is considered a single layer for B32B when woven or knit fabrics are produced in a single step wherein the yarns simultaneously form a fabric that comprises outer plies with middle connecting (spacer) yarns. (2) A spaced fabric is considered to include multiple layers for B32B when the fabric is made from at least two preformed fabrics that are joined together with connecting yarns to create a laminate structure with a space between the outer fabrics.

The layer has to have one of the forms defined hereunder:

Preformed layers

Preformed layer, i.e. taking the form of a layer at some stage before being brought into combination with another layer. Preformed layers include:

- coherent solid layers including honeycombs or similar layer of regularly arranged cells;
- non-coherent solid layers consisting of assemblies of strands, strips, tiles or like elements, which are juxtaposed side-by-side;
- fleeces or fabrics (including spaced fabrics);
- preformed paper webs;
- doughs which are cast onto a plate to form a solid sheet when set (including set mortars, cements and concretes);
- self-supporting pre-moulded layers, e.g. pre-extruded, pre-cast;
- self-supporting transfer coatings.

Layers formed in-situ

Layers formed in-situ, i.e. taking the form of a layer while or after being brought into combination with another layer. Layers formed in-situ include:

- layer formed by casting, extrusion or moulding (e.g. injection, rotational process) of a melt material;
- by assembling strands, strips, tiles or like elements juxtaposed side-by-side onto a preformed layer;
- fleeces and fabrics formed onto a preformed layer and bonded or impregnated into a cohesive sheet, e.g. spunbonded fabric;
- mortars, cements and concrete layers formed onto a preformed layer.

Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "Synthetic rubber" and "thermosetting synthetic rubber"
- "Layer of particles", "layer formed of particles" and "layer made of particles"
- "Layer of fibres", "layer formed of fibres" and "layer made of fibres"
- "Spaced fabric", "three-dimensional fabric", "3-D fabric" and "spacer fabric"

B32B 1/00

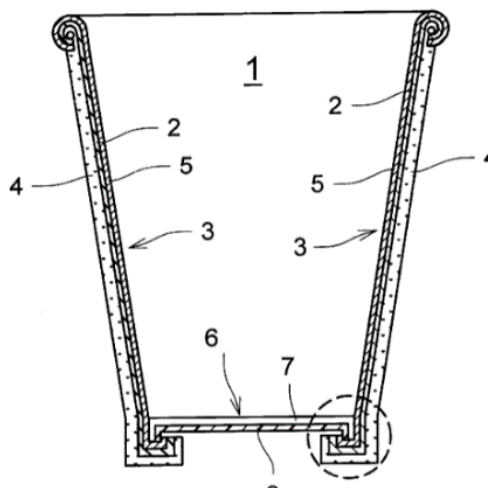
Layered products having a non-planar shape

Definition statement

This place covers:

Layered products having a non-planar shape, such as an article having a shape that defines an internal cavity, e.g. a container, or in the form of a tubular product.

Illustrative example of subject matter classified in this place:



Relationships with other classification places

A planar layered product having a cavity or internal void formed within a single layer should be placed in [B32B 3/26](#) or its subgroups and not in [B32B 1/00](#).

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Containers for medical or pharmaceutical purposes	A61J 1/00
Fuel tanks	B60K 15/00
Containers; Packages	B65D
Vessels for containing or storing compressed, liquefied or solidified gases; Fixed capacity gas holders	F17C

Special rules of classification

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

Layered products in the shape of a container or receptacle are also classified in [B32B 2439/00](#) – [B32B 2439/80](#).

B32B 1/08

Tubular products

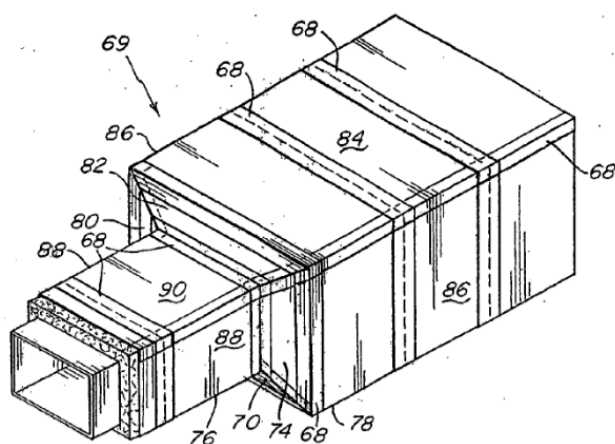
Definition statement

This place covers:

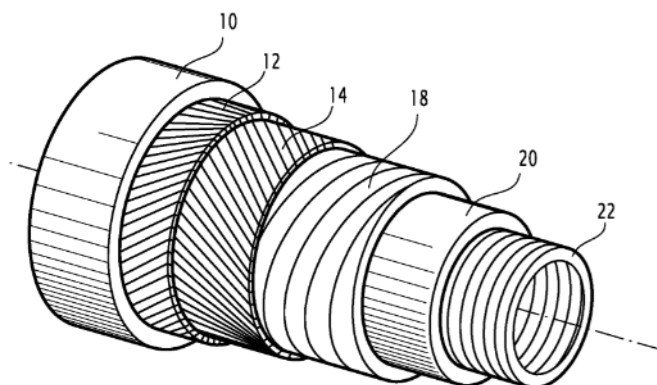
Layered products characterised by a hollow structure with an elongated length, e.g. a hose, pipe or sleeve, wherein the hollow structure may, or may not, be closed at one end.

Illustrative examples of subject matter classified in this place:

1.



2.



References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Sausage casings	A22C 13/00
Catheters	A61M 25/00
Tubes for medical use	A61M 39/00
Rigid pipes	F16L 9/00
Hoses, i.e. flexible pipes	F16L 11/00
Thermal insulation sleeves	F16L 59/00

Special rules of classification

Layered products in the shape of a tube, hose, pipe or sleeve are also classified in [B32B 2597/00](#).

Synonyms and Keywords

In patent documents, the word/expression in the first column is often used instead of the word/expression in the second column, which is used in the classification scheme of this place:

Tubular product	Tube, pipe or hose
-----------------	--------------------

B32B 3/00

Layered products comprising a layer with external or internal discontinuities or unevennesses, or a layer of non-planar shape; Layered products comprising a layer having particular features of form

Definition statement

This place covers:

Features of form of any of the individual layers of a layered product. Examples include:

- a layer with an edge feature, e.g. chamfered or beveled edge;
- a discontinuous layer, e.g. a honeycomb or tiled floor layer;
- a layer having an internal cavity within the layer;
- a corrugated layer

Definition statement

- an apertured layer; and
- a layer having a variation in thickness, e.g. roughened or grooved.

Relationships with other classification places

[B32B 1/00](#) – [B32B 1/08](#) cover layered products where all the layers cooperate to define a non-planar shape, whereas [B32B 3/00](#) – [B32B 3/30](#) cover features related to the shape of individual layers in planar or non-planar layered products.

The following physical structure of an individual layer does not constitute a feature of form that is proper for this main group:

- A fibrous or filamentary layer, which is provided for in [B32B 5/02](#) – [B32B 5/12](#) and/or [B32B 5/22](#) – [B32B 5/2795](#);
- A particulate layer, which is provided for in [B32B 5/16](#) or [B32B 5/30](#); and
- A foamed layer, which is provided for in [B32B 5/18](#) – [B32B 5/20](#), [B32B 5/245](#) and/or [B32B 5/32](#).

However, if a layered product has a fibrous, filamentary, foamed or particulate layer having a feature of form proper for this main group, it should also be classified in this main group. For example, a layered product having a non-woven fibrous layer with apertures in the layer would be proper for [B32B 3/266](#) and [B32B 5/022](#).

Special rules of classification

Layered products having a layer of regularly-arranged cells shall be placed in [B32B 3/12](#) regardless of whether the layer was formed from one piece or separate pieces of material juxtaposed side-by-side.

Layered products having a layer with a feature of form that differs physically in different parts of the layer are provided for in both [B32B 3/00](#) – [B32B 3/30](#) and [B32B 5/14](#) – [B32B 5/147](#). For example, a layer having a density variation in apertures across its surface area would be provided for in [B32B 3/266](#) and [B32B 5/142](#).

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

added member	any discrete element(s) secured to the layered product that does not constitute a layer or adhesive as per the B32B definitions, e.g. an insert or a spacer element.
juxtaposed side-by-side	in direct contact or with a bonding material, e.g. adhesive or mortar, in between.

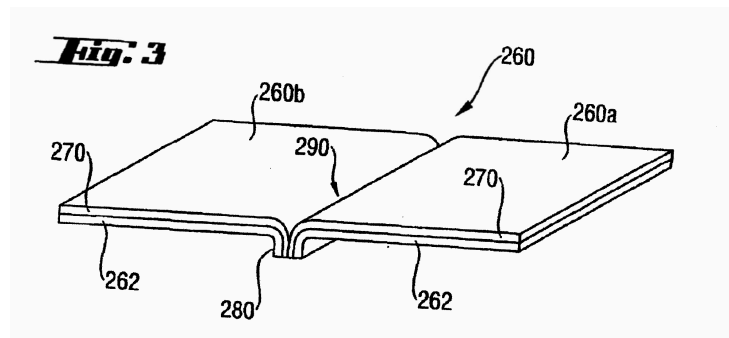
B32B 3/02

characterised by features of form at particular places, e.g. in edge regions
 {(non-uniform thickness [B32B 3/263](#))}

Definition statement

This place covers:

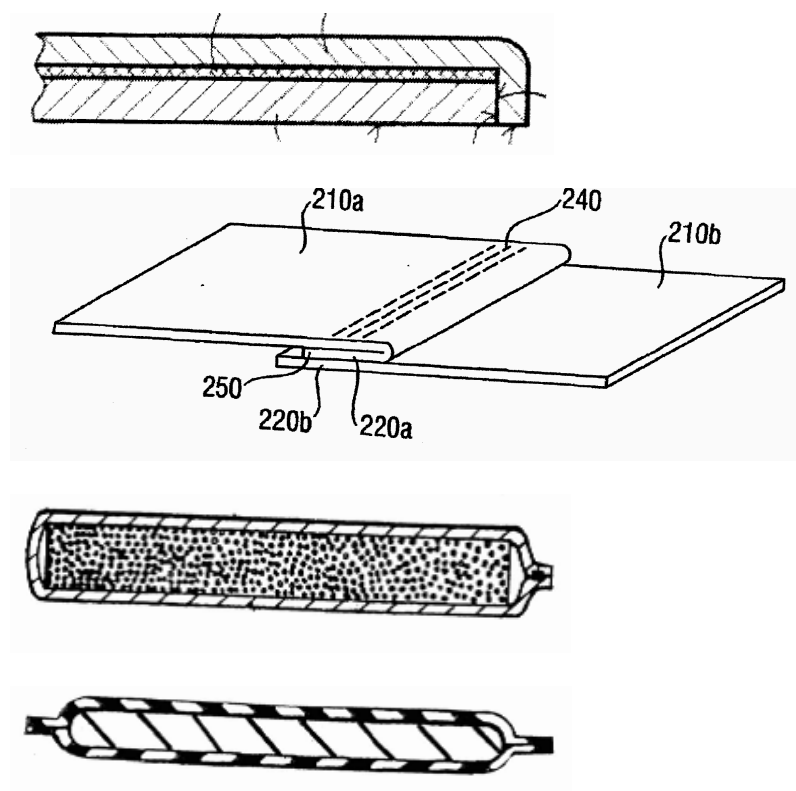
Illustrative example of subject matter classified in this group:

**B32B 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}

Definition statement

This place covers:

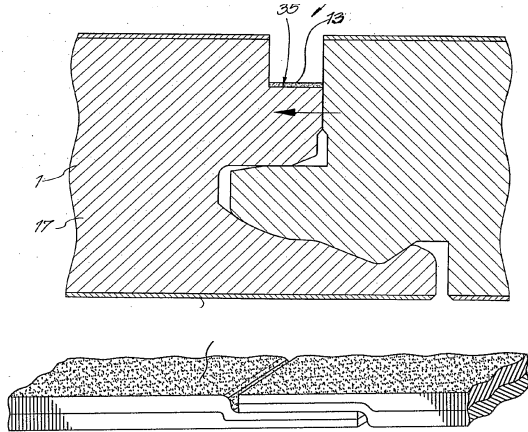


B32B 3/06

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}

Definition statement

This place covers:

**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Use or provision of nails, stitches, or similar separate fastening elements for these purposes
--

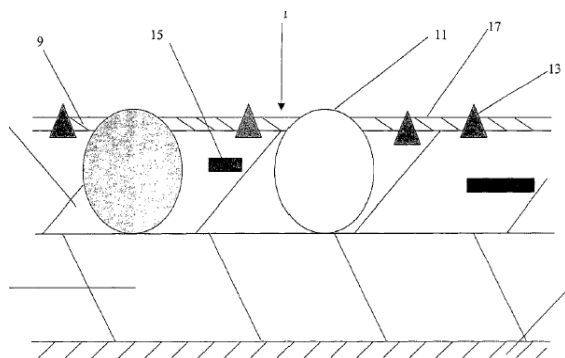
B32B 7/08

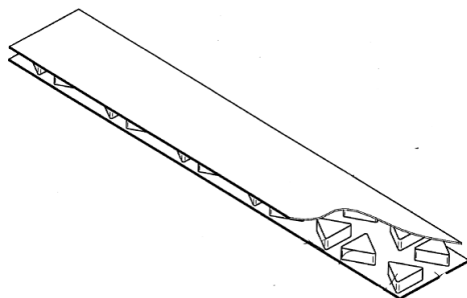
B32B 3/085

{spaced apart pieces on the surface of a layer}

Definition statement

This place covers:





References

Limiting references

This place does not cover:

Products characterised by a layer formed by regularly laid parallel cords or filaments, which may be bunched, flat or slightly separated	B32B 5/02
--	---------------------------

B32B 3/10

characterised by a discontinuous layer, i.e. formed of separate pieces of material

References

Limiting references

This place does not cover:

Products characterised by having added members at particular parts	B32B 3/08
Products characterised by a layer formed by regularly laid parallel cords or filaments, which may be bunched, flat or slightly separated	B32B 5/02

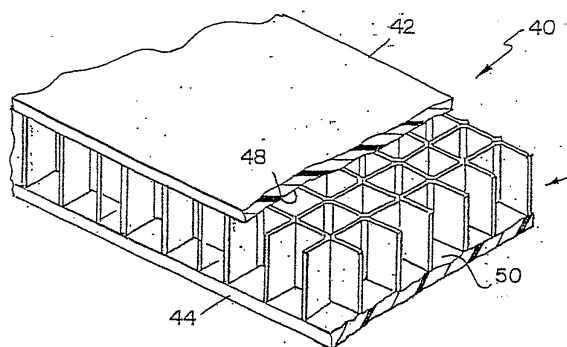
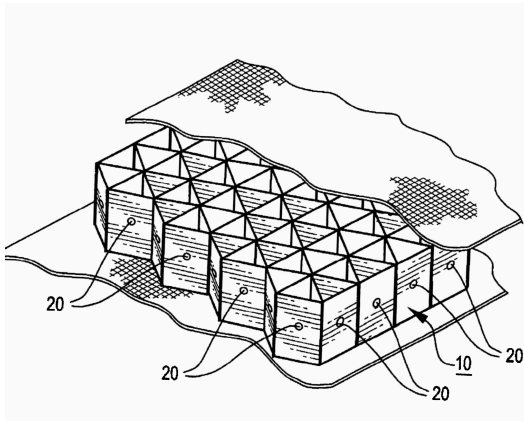
B32B 3/12

characterised by a layer of regularly- arranged cells, e.g. a honeycomb structure

Definition statement

This place covers:

Layered products comprising honeycombs and similar layers of cells having a regular, repeating, geometric structure.



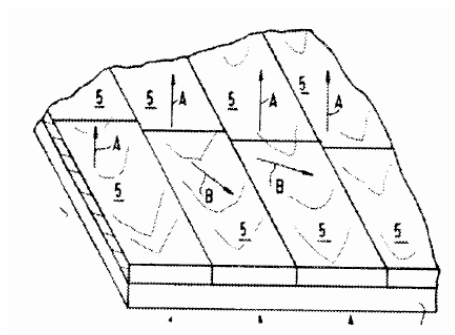
B32B 3/14

characterised by a face layer formed of separate pieces of material {which are juxtaposed side-by-side ([B32B 5/02](#) takes precedence)}

Definition statement

This place covers:

Layered products comprising a face layer formed by elements, e.g. tiles, strips, rods, bricks and other elements, which are juxtaposed side-by-side, e.g. mosaics. The elements are laid out in a specific manner rather than merely agglomerated or scattered and are larger than mere particles.

**B32B 3/18**

characterised by an internal layer formed of separate pieces of material {which are juxtaposed side-by-side ([B32B 5/02](#) takes precedence)}

Definition statement

This place covers:

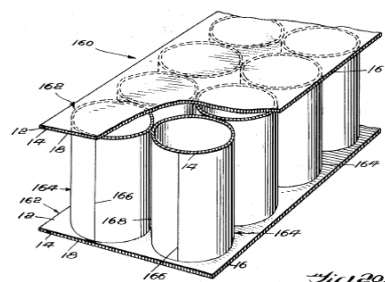
Layered products comprising an internal layer formed by elements, e.g. tiles, strips, rods, bricks and other elements, which are juxtaposed side-by-side, e.g. mosaics. The elements are laid out in a specific manner rather than merely agglomerated or scattered and are larger than mere particles.

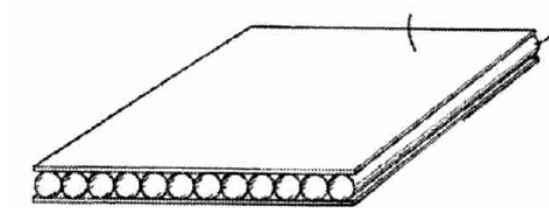
B32B 3/20

of hollow pieces, e.g. tubes; of pieces with channels or cavities

Definition statement

This place covers:



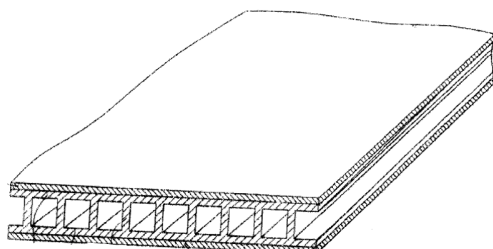


B32B 3/26

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}

Definition statement

This place covers:



References

Limiting references

This place does not cover:

Products characterised by a foamed layer	B32B 5/18
Products characterised by a synthetic resin layer comprising fillers which create voids or cavities, e.g. by stretching	B32B 27/205

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Cavities	Hollow spaces within a layer
----------	------------------------------

B32B 3/263

{characterised by a layer having non-uniform thickness}

Definition statement

This place covers:

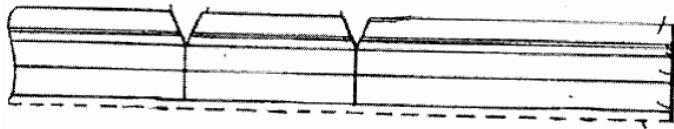
Layered products comprising a layer having changes of thickness which are not of a minor and accidental nature, or a mere, non intended result of a surface structure, e.g. grooves, ribs or protuberances.

B32B 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](#)}

Definition statement

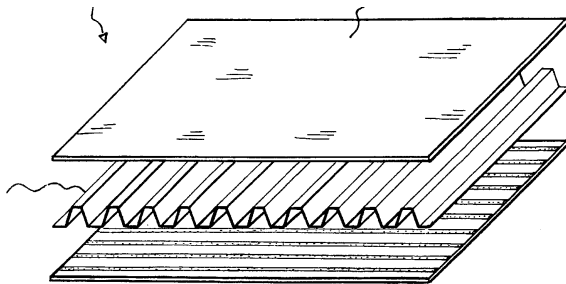
This place covers:

**B32B 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)

Definition statement

This place covers:

**References****Limiting references**

This place does not cover:

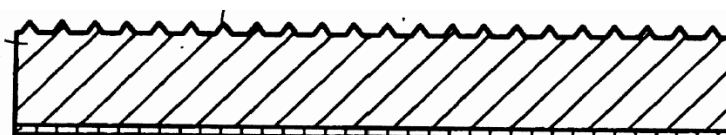
Corrugated paper or corrugated cardboard	B32B 29/08
--	----------------------------

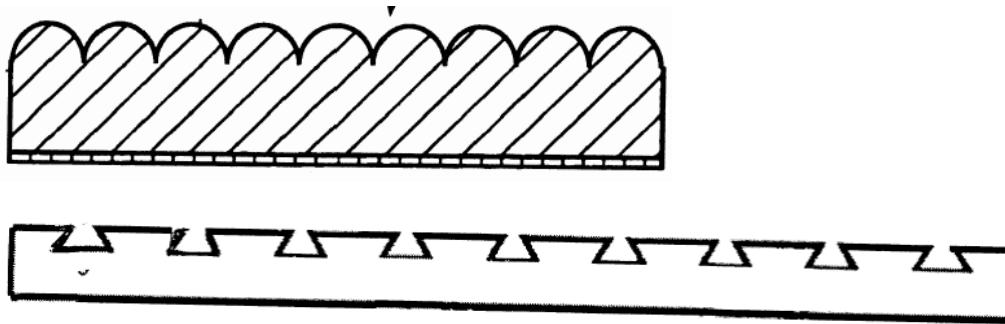
B32B 3/30

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](#))}

Definition statement

This place covers:





B32B 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}

Definition statement

This place covers:

Layered products comprising at least one layer that is a fibrous, filamentary, particulate or foamed layer (see definitions in [B32B](#) subclass glossary). A layered product can include:

- Multiple fibrous or filamentary layers, e.g. multi-layered fabrics
- Multiple particulate layers
- Multiple foamed layers
- Combinations of fibrous, filamentary, foamed and/or particulate layers
- Fibrous, filamentary, particulate or foamed layers that are impregnated or embedded
- A fibrous, filamentary, particulate or foamed layer that is combined with another layer

Layered products characterised by a layer differing constitutionally or physically in different parts, e.g. a synthetic resin layer that has greater crosslinking near its faces; a cementitious layer with different density from core to outer faces.

Relationships with other classification places

In classifying a layered product comprising a fibrous, filamentary, foamed or particulate layer, each layer in the layered product is classified in the appropriate subgroup for that specific layer based on material, adjacency and/or structure. The fibrous, filamentary, foamed or particulate layer(s) is classified in [B32B 5/00](#) and the layer(s) of other materials are classified in other [B32B](#) subgroups as appropriate for the specific layer. Several classification symbols can be given.

- Layered products that comprise a fibrous, filamentary, foamed or particulate layer and that have at least one additional layer covered by material subgroups [B32B 9/00](#) - [B32B 29/00](#), e.g. synthetic resin, paper, leather, metal, etc., are also classified in the appropriate material subgroups [B32B 9/00](#) - [B32B 29/00](#) for the additional layer.
- Layered products that comprise a fibrous, filamentary, foamed or particulate layer and the layered product or layer per se has additional features according to [B32B 1/00](#), [B32B 3/00](#) and [B32B 7/00](#), e.g. corrugations or apertures are also classified in subgroups [B32B 1/00](#), [B32B 3/00](#), and [B32B 7/00](#).

Example:

- A fibrous or filamentary layer made from synthetic resin fibres, e.g. polypropylene, would be classified in [B32B 5/00](#) for the fibrous layer structure and [B32B 2262/0253](#) for the polypropylene fibres. Classification in [B32B 27/00](#) is not given.

Relationships with other classification places

- If the fibrous layer is next to a synthetic resin layer, e.g. a polypropylene resin film, classification is given in [B32B 27/12](#) for the adjacency of the fibrous layer to the synthetic resin and [B32B 27/32](#) for the polypropylene synthetic resin layer.
- If the fibrous layer has apertures formed in the layer, classification in [B32B 3/266](#) also is provided. If adhesive is used to bond the layers classification in [B32B 7/12](#) is also provided.

Layers in which the fibres, filaments or particles are present as additives or filler material are classified in the appropriate material subgroup of the matrix material, e.g. [B32B 25/02](#).

Classification in other areas of [B32B](#) should be made in the following situations:

- Layers formed of metallic wires are classified in [B32B 15/02](#).
- Layers formed of natural mineral fibres or particles are classified in [B32B 19/00](#).
- Layers formed of wood fibres or particles are classified in [B32B 21/00](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layered products comprising a layer of bituminous or tarry substances in which fibres, filaments or particles are present as additives, e.g. as fillers	B32B 11/02
Layered products comprising a layer of a water-setting substance in which fibres, filaments or particles are present as additives, e.g. as fillers	B32B 13/02
Layered products comprising a layer of a natural or synthetic rubber in which fibres, filaments or particles are present as additives, e.g. as fillers	B32B 25/02
Layered products comprising a layer of a synthetic material in which fibres, filaments or particles are present as additives, e.g. as fillers	B32B 27/18
Shaping composites, i.e. plastics material comprising reinforcements, fibrous reinforcements only	B29C 70/06 - B29C 70/24
Production of macromolecular porous or cellular articles	C08J 9/00
Woven materials	D03D
Knitted materials	D04B
Non-woven materials	D04H
Tufted materials	D05C 17/00
Producing multi-layer textile fabrics	D06M 17/00
Artificial leather, oilcloth or other material obtained by covering fibrous webs with macromolecular material; characteristics of foam layer; obtained by applying a ready-made foam layer	D06N 3/0043

Special rules of classification

- [B32B 5/28](#) contains documents published before 2006 and is no longer used for the classification of documents after this date.
- Coating on a fibrous, filamentary or particulate layer is classified with an appropriate Indexing symbol in [B32B 2255/00](#).
- The fibres, filaments or particles of a fibrous, filamentary or particulate layer may be impregnated, embedded or bonded with a substance such as a synthetic resin. The impregnating or embedding substance is classified with an appropriate Indexing symbol in [B32B 2260/00](#).
- The structure or nature of the fibres or filaments forming the fibrous or filamentary layer is classified with an appropriate Indexing symbol in [B32B 2262/00](#).

- The nature of the particles forming the particulate layer is classified with an appropriate Indexing symbol in [B32B 2264/00](#).
- The nature of the foam forming the foamed layer is classified with an appropriate Indexing symbol in [B32B 2266/00](#).

B32B 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](#))}

Definition statement

This place covers:

Layered products comprising a fibrous or filamentary layer, e.g. woven; non-woven; knit; nets produced from fibres, filaments, yarns, threads; ribbons or tapes; or a layer formed by regularly laid parallel cords or filaments, which may be bunched, flat or slightly separated, e.g. juxtaposed-side-by-side.

Relationships with other classification places

Classification of fibrous and filamentary layered products is provided for in many technical areas of CPC depending on the structure of the fabric or textile layers, yarns, fibres or filaments. However, in order that this subgroup may provide a basis for making a complete search with respect to fibrous or filamentary layered products, any layered product that specifies relevant useful information is classified in this subgroup even though it may also be classified in other Subclasses. Several classifications symbols can be given.

Classification in other areas should be made in the following situations:

- Classification in the appropriate areas of Section [D](#), for textile features not provided for in [B32B](#), e.g. a specific weave or specific knit structure would also be classified in [D03D](#) or [D04B](#) respectively. Classification in both [B32B 5/00](#) subgroups and Section [D](#) is appropriate.

References

Limiting references

This place does not cover:

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

Special rules of classification

- Layered products wherein all layers are fibrous or filamentary layers are also classified with an appropriate Indexing symbol in [B32B 2250/20](#).
- Layered products where the fibrous or filamentary layer is coated or impregnated are classified with an appropriate Indexing symbol in [B32B 2255/00](#) or [B32B 2260/00](#).
- The structure or nature of the fibres or filaments forming the fibrous or filamentary layer is classified with an appropriate Indexing symbol in [B32B 2262/00](#).

B32B 5/08

the fibres or filaments of a layer being of different substances {, e.g. conjugate fibres, mixture of different fibres}

Special rules of classification

- The structure or nature of the fibres or filaments forming the fibrous or filamentary layer is classified with an appropriate Indexing symbol in [B32B 2262/00](#).
- For conjugate and/or mixed fibres or filaments associated with a specific layer, e.g. the woven layer, knit, non-woven or netting layer, classification is required with an appropriate Indexing symbol in [B32B 2262/12](#) - [B32B 2262/156](#).

B32B 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}

Definition statement

This place covers:

Layered products characterised by a particular arrangement of the fibres or filaments of the layers, e.g. fibres or filaments of the different layers being parallel or perpendicular to each other. The layers may be next to each other or separated by other layers.

B32B 5/16

characterised by features of a layer formed of particles, e.g. chips, powder {or granules (layer formed of natural mineral particles [B32B 19/00](#); layer being formed of wood fibres, chips or particles [B32B 21/02](#))}

References**Limiting references**

This place does not cover:

Layer formed of natural mineral particles	B32B 19/00
Layer formed of wood fibres, chips or particles	B32B 21/02

Special rules of classification

- The structure or nature of the particles forming the particulate layer is classified with an appropriate Indexing symbol in [B32B 2264/00](#).
- Coated or impregnated particulate layers are classified with an appropriate Indexing symbol in [B32B 2255/00](#) or [B32B 2260/00](#).

B32B 5/18

characterised by features of a layer {of} foamed material

Special rules of classification

- Layered products wherein all layers are foamed layers are also classified in [B32B 2250/22](#).
- The structure or nature of the foam forming the foamed layer is classified with an appropriate Indexing symbol in [B32B 2266/00](#).

B32B 5/20**foamed in situ****Definition statement**

This place covers:

In-situ foams include a foamable layer that is assembled or installed and then foamed in or within the laminate or installation, e.g. a foamable polymer layer between two exterior layers, wherein the polymer layer is converted to foam after assembly between the exterior layers. The foamable layer can be preformed or can take the form of a layer while or after being brought into combination with another layer, e.g. casting, extrusion or molding of a melt material.

B32B 5/26**another layer {next to it} also being fibrous or filamentary {(relative arrangement of fibres or filaments of different layers [B32B 5/12](#))}****Definition statement**

This place covers:

Layered products characterised by the adjacency of more than one fibrous or filamentary layers, i.e. woven, non-woven, knit or net layers, which are adjacent at least one or more woven, non-woven, knit or net layers. For example, a woven layer adjacent a non-woven layer; a knit layer adjacent a non-woven layer; a woven layer adjacent one or more non-woven layers.

Special rules of classification

Classification in subgroups [B32B 5/26-B32B 5/2795](#) is determined by the subgroup with the most specific subject matter. Classification in [B32B 5/26-B32B 5/2795](#) is only required in the subgroup with the lowest level of indentation.

- Example 1: A layered product comprising a woven layer next to a non-woven layer. Classification in [B32B 5/275](#) is provided because this subgroup has the lowest level of indentation directed to the specific combination of layers.
- Example 2: A layered product comprising a melt-blown non-woven layer next to a spunbond non-woven layer. Classification in [B32B 5/269](#) is provided because this subgroup has the lowest level of indentation directed to the specific combination of layers.

Layered products wherein all layers are fibrous or filamentary layers are also classified in [B32B 2250/20](#).

Layered products wherein two or more fibrous or filamentary layers are impregnated are classified in [B32B 2260/023](#).

Layered products with conjugate and/or mixed fibres or filaments associated with a fibrous or filamentary layer, i.e. woven, non-woven, knit or netting, are classified in [B32B 2262/12-B32B 2262/156](#).

B32B 5/32**{at least two} layers being foamed {and next to each other}****Special rules of classification**

Layered products wherein all layers are foamed layers are also classified in [B32B 2250/22](#).

B32B 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

Definition statement

This place covers:

This group covers layered products in which the relationship between the layers is important. The relationship could be, for example, the differences between physical or chemical properties, patterns of connection, and the orientations of features.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

In respect of orientation of features, see the relevant groups for the features concerned, e.g. for direction of fibres	B32B 5/02
In respect of substances	B32B 9/00 - B32B 29/00

B32B 7/02

Physical, chemical or physicochemical properties

Definition statement

This place covers:

This group covers layered products characterised by having two or more layers, one of which differs from another with respect to a physical property, e.g. density, melting point, refractive index. Examples of this type of product are those comprising layers of:

- Hard and soft wood,
- High and low density PE,
- Harder and softer nylon,
- Oriented and non-oriented PP,
- Plasticized and non-plasticized PVC.

B32B 7/03

with respect to the orientation of features (direction of fibres or filaments)
[B32B 5/12](#)

Definition statement

This place covers:

This group covers layered products characterised by having two or more layers, one of which differs from another with respect to the orientation of features, e.g. the direction of one layer's corrugation or joints differs from that of another layer. The layers may be next to each other or separated by other layers.

Relationships with other classification places

If there is only one corrugated layer in a layered product, it is classified in [B32B 3/28](#) or [B32B 29/08](#).

References

Limiting references

This place does not cover:

Direction of fibres or filaments	B32B 5/12
----------------------------------	---------------------------

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layered products characterised by a layer comprising a deformed thin sheet, e.g. corrugated, crumpled	B32B 3/28
Corrugated paper or cardboard	B32B 29/08

B32B 7/06

permitting easy separation

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Adhesives in the form of films or foils having a release liner	C09J 7/40
--	---------------------------

B32B 7/09

by stitching, needling or sewing (by {mechanically connecting} fibrous layers {to another layer} [B32B 5/06](#))

References

Limiting references

This place does not cover:

Fibrous or filamentary layer mechanically connected, e.g. by needling, sewing, stitching, hydroentangling, hook-and-loop fastening to another layer, e.g. of fibres, of paper	B32B 5/06 , B32B 5/067 , B32B 5/073
---	--

B32B 7/10

at least one layer having inter-reactive properties

Definition statement

This place covers:

This group covers layered products in which a pair of interconnected layers is bonded by one or both layers having inter-reactive properties, wherein neither layer of the interconnected pair comprises an adhesive – whether a coated adhesive, a tie layer, or a layer described as acting as an adhesive.

B32B 7/12

using interposed adhesives or interposed materials with bonding properties

Definition statement

This place covers:

This group covers layered products comprising an adhesive – whether a coated adhesive, a tie layer or a layer described as acting as an adhesive – inserted between two layers to bond them.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Adhesive processes in general or use of a material as adhesive	C09J
--	----------------------

B32B 9/00

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

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Layered products characterised by having a fibrous or filamentary layer made of a substance not covered by groups B32B 11/00 - B32B 17/00 or B32B 19/00 - B32B 29/00	B32B 5/02 , B32B 2262/00 - B32B 2262/14
Layered products characterized by having a particulate layer made of a substance not covered by groups B32B 11/00 - B32B 17/00 or B32B 19/00 - B32B 29/00	B32B 5/16 , B32B 2264/00 - B32B 2264/12
Layered products characterised by having a foamed layer made of a substance not covered by groups B32B 11/00 - B32B 17/00 or B32B 19/00 - B32B 29/00	B32B 5/18 , B32B 2266/00 - B32B 2266/14
Products comprising at least two ceramic layers	B32B 18/00
Joining ceramic layers with other ceramic layers or layers of other materials by heating	C04B 37/00

B32B 9/002

{comprising natural stone or artificial stone}

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Artificial stone	Material made by crushing and grinding natural stone and then re-constituting it, e.g. with cement mortar or with a resin binder
------------------	--

B32B 11/02**with fibres or particles {being present as additives in the layer}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Product characterised by a fibrous or filamentary layer embedded or impregnated in a bituminous substance	B32B 5/02 , B32B 2260/042
Product characterised by a particulate layer embedded or impregnated in a bituminous substance	B32B 5/16 , B32B 2260/042

Special rules of classification

- The nature of the fibres or filaments is classified in [B32B 2262/00](#).
- The nature of the particles is classified in [B32B 2264/00](#).

B32B 13/00**Layered products comprising a {a layer of} water-setting substance, e.g. concrete, plaster, asbestos cement, or like builders' material****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Cements; Compositions thereof, e.g. mortars, concrete or like building materials	C04B
--	----------------------

B32B 13/02**with fibres or particles {being present as additives in the layer}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Product characterised by a fibrous or filamentary layer embedded or impregnated in a water-setting substance	B32B 5/02 , B32B 2260/044
Product characterised by a particulate layer embedded or impregnated in a water-setting substance	B32B 5/16 , B32B 2260/044

Special rules of classification

- The nature of the fibres or filaments is classified in [B32B 2262/00](#).
- The nature of the particles is classified in [B32B 2264/00](#).

B32B 15/00**Layered products comprising {a layer of} metal****Definition statement**

This place covers:

Layered products characterised by having a continuous or discontinuous metal layer.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Layered products characterised by having a metallic fibrous or filamentary layer	B32B 5/02 , B32B 2262/103
Layered products characterised by having a metallic particulate layer	B32B 5/16 , B32B 2264/105
Layered products characterised by having a metallic foamed layer	B32B 5/18 , B32B 2266/045
Coatings on or with metals	C23C
Electrolytic deposition of metals	C25D

Special rules of classification

Coating on a metallic layer is classified with an appropriate Indexing symbol in [B32B 2255/00](#)

B32B 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](#))}

Definition statement

This place covers:

Layered products with all layers being metallic in the form of sheets/plates, distinct layers. They can be made by any possible method such as roll bonding, cladding, brazing, coating etc.

Relationships with other classification places

If the layered product comprises a layer that is not metallic such as polymer, ceramic, glass etc. then it is not classified in [B32B 15/01](#)- [B32B 15/018](#), but in other parts of [B32B](#).

References**Limiting references**

This place does not cover:

Making layered metal workpieces by pressure cladding	B23K 20/22
Making coatings with a metallic material characterised by its composition	C23C 30/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Biomedical applications, stents	A61F , A61L
Rolling of metals	B21B
Powder metallurgy	B22F
Changing the physical structure of ferrous metals/alloys	C21D
Changing the physical structure of non ferrous metals/alloys	C22F
Heat exchangers	F28F
Armour constructions/plates	F41H
Electrical wires	H01B
Magnets	H01F
Batteries/fuel cells	H01M
Electrical connectors	H01R
Electronic components	H05K

Special rules of classification

- In metallic layered products having layer(s) of a specific composition, in addition to classification in [B32B 15/01](#), the composition of each layer is classified in [C22C](#) ([C22C 5/00](#) - [C22C 45/00](#)).
- When the layered product is produced by a specifically described method (examples, claims) then the method is classified as well ([B22F](#), [C23C](#), [B23K](#), [C25D](#), [B21B](#), etc.).
- When the layered product is intended for a particular use then the use is classified as well (see informative references for illustrative uses).
- Galvanized steels having a specific composition of a substrate and/or of the Zn layer are classified in [B32B 15/013](#).
- Brazing sheets/composite materials (e.g. for heat exchangers) with all layers formed of aluminium or aluminium alloys are classified in [B32B 15/016](#).
- A layered product consisting of a layer of steel, a layer of aluminium alloy and a layer of Ni alloy will be classified in both other [B32B 15/012](#) and [B32B 15/015](#).

B32B 17/00

Layered products essentially comprising sheet glass, or glass, slag, or like fibres

Definition statement

This place covers:

Layered products comprising:

- inorganic glass in sheet or film form, fibres of glass or slag secured to another layer of inorganic glass;
- glass in the form of a sheet or film bonded with a transparent synthetic resin to another transparent layer; and
- laminated glazings.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Automotive windows	B60J 1/00
Railway windows	B61D 25/00
Canopies; windscreens or similar transparent elements for aircraft	B64C 1/1476
Antiballistic glazings	F41H 5/0407
Liquid crystal displays	G02F 1/13
Heating windshields	H05B 3/84
Encapsulations or containers for integrated devices, or assemblies of multiple devices, having photovoltaic cells	H10F 19/80

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layered products comprising a fibrous layer	B32B 5/02
Furniture panels or shelves	A47B 96/00
Show cases or cabinets	A47F 3/00
Fibre-reinforced material	B29C 66/721
Producing optical elements from plastics	B29D 11/00
Designs with unusual light effects	B44F 1/00
Glass compositions	C03C 3/00
Coatings on glass	C03C 17/00
Surface treatment of glass fibres	C03C 25/00
Joining pieces of glass to pieces of other inorganic material	C03C 27/00
Manufacture of prepregs	C08J 5/24
Compositions of polymers	C08L
Coverings or linings of glass, e.g. for walls or ceilings	E04F 13/14
Layout of fixed or moving closures, e.g. windows	E06B 3/54
Insulating glass windows	E06B 3/67
Constructional features of refrigerators	F25D 23/00
Optical devices made from glass	G02B 1/00
Alarm windows	G08B 13/04
Billboards	G09F 13/00
Window antennas	H01Q 1/1271
Printed circuit boards comprising glass substrates	H05K 1/0306
Transparent shielding materials against electric or magnetic fields	H05K 9/0094

Special rules of classification

- [B32B 17/00](#) requires that the layered product comprises at least one glass layer and at least one layer of another material; a layered product comprising both a glass layer and a glass fibre layer is classified in both [B32B 17/02](#) (or [B32B 17/04](#)) and [B32B 17/06](#).
- The layer adjacent to the glass layer is specified by classifying in one of the appropriate groups selected in the range [B32B 17/06](#) - [B32B 17/10005](#).
- Layered products comprising a layer of glass next to a layer of synthetic resin are classified in [B32B 17/10](#).
- Layered products comprising a layer of glass next to a layer of synthetic resin that are considered to be laminated safety glass or glazing are classified in [B32B 17/10005](#) and its subgroups.
- The layer of synthetic resin is further specified in [B32B 17/1055](#) and its subgroups when it is used as an interlayer to create the laminated safety glass or glazing. The resin interlayer or all components of a composite interlayer are to be considered a layer proper for [B32B](#) and can be made by any process, including a coating process.
- [B32B 17/10005](#) - [B32B 17/1099](#), a layer of organic glass is not considered as a glass layer but as a synthetic resin layer which is classified using orthogonal Indexing symbols selected from the groups [B32B 2319/00](#) - [B32B 2386/00](#) allocated as single symbols or in C-Sets as explained in [B32B 17/10005](#).

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Laminated safety glass or glazing, safety glazing, laminated glazing	Inorganic glass layer in sheet form bonded to another inorganic glass layer in sheet form or to a durable polymeric sheet or film via a resin interlayer, and wherein the interlayer keeps the laminated safety glass or glazing bonded even when struck or broken, preventing the glass from shattering.
Interlayer	An internal layer of thermoplastic polymer bonding the components of a laminated safety glass or glazing to one another.
Intermediate layer, intermediate film	An internal layer or film used as a barrier or as a carrier for functional layers and not having adhesive properties.
Plasticiser	Organic compound which reduces the glass transition temperature of the interlayer, usually an interlayer of PVB.
Glazing	A transparent closure of an opening such as the glass of a window.
Composite interlayer	A composite laminate that binds the inorganic glass layer to another inorganic glass layer or the durable polymeric sheet or film of the laminated safety glass or glazing. The composite interlayer comprises at least one interlayer and may also comprise an intermediate layer and/or a functional layer.

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

PVB	Polyvinyl butyral
PHR	Parts per hundred of resin - amount of plasticiser per 100 parts of PVB
IG	Insulation glass
FRP	Fibre-reinforced plastic
PCB	Printed circuit board
PWB	Printed wiring board

B32B 17/02

in the form of fibres or filaments

Relationships with other classification places

In the case that a layered product comprises a layer of glass fibres without any layer of sheet glass, classification is done in [B32B 5/02](#), the presence of glass fibres being classified by the indexing symbol [B32B 2262/101](#).

Special rules of classification

[B32B 17/00](#) requires that the layered product comprises at least one glass layer and at least one layer of another material; a layered product comprising both a glass layer and a glass fibre layer is classified in both [B32B 17/02](#) (or [B32B 17/04](#)) and [B32B 17/06](#).

B32B 17/06

comprising glass as the main or only constituent of a layer, next to another layer of a specific {material}

Definition statement

This place covers:

Layered products comprising an inorganic glass layer in sheet or film form next to another layer of generic material.

The layers need not be permanently secured, such as a releasable protective layer.

Relationships with other classification places

Various materials are used in combination with sheets of glass for the enhancement of the properties of one of the layer, for instance, for protection or reinforcement of natural stone, for architectural purposes in general ([E06B 3/54](#) or [E04F 13/14](#)), or for displays in a variety of devices.

Special rules of classification

[B32B 17/06](#) is given in the case that an inorganic glass layer is present next to another glass layer with no further information.

B32B 17/08

of cellulosic plastic substance {or gelatin}

Definition statement

This place covers:

Layered products comprising inorganic glass in sheet or film form next to a layer of a cellulose derivative or gelatin as polymeric substance.

B32B 17/10**of synthetic resin****Definition statement**

This place covers:

Layered products comprising at least one inorganic glass layer in sheet or film form next to a layer of synthetic resin; the synthetic resin layer can be used as a glue layer to bond the glass layer with another glass layer or another material layer or can be used as a removable protective film.

Special rules of classification

In this group, a layer of organic glass is not considered as a glass layer but as a synthetic resin layer. The nature of the synthetic resin material is classified using the appropriate orthogonal symbols from groups [B32B 2319/00](#) - [B32B 2386/00](#) as a single symbol(s).

B32B 17/10005**{laminated safety glass or glazing}****Definition statement**

This place covers:

Layered products comprising at least one inorganic glass layer in sheet form next to a layer of synthetic resin; wherein the glass sheet is permanently bonded to at least one further glass layer in sheet form or a durable polymeric sheet or film via the layer of synthetic resin as a resin interlayer, and wherein the interlayer keeps the laminated safety glass or glazing bonded even when struck or broken, preventing the glass from shattering.

Relationships with other classification places

Laminated safety glass or glazing is used for automotive and transport applications (automotive windows in general [B60J 1/00](#)), for architectural purposes ([E06B 3/54](#) or [E04F 13/15](#)), transparent armour ([F41H 5/0407](#)), head-up displays ([G02B 27/01](#)) and photovoltaic modules ([H10F 19/80](#)).

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Automotive windows	B60J 1/00
Railway windows	B61D 25/00
Aircraft windows	B64C 1/1484
Antiballistic glazings	F41H 5/0407
Head-up displays	G02B 27/01
Heating windshields	H05B 3/84
Encapsulations or containers for integrated devices, or assemblies of multiple devices, having photovoltaic cells	H10F 19/80

Informative references

Attention is drawn to the following places, which may be of interest for search:

Glass compositions	C03C 3/00
--------------------	---------------------------

Coatings on glass	C03C 17/00
Joining pieces of glass to pieces of other inorganic material	C03C 27/00
Sky-lights	E04D 13/03
Coverings or linings of glass, e.g. for walls or ceilings	E04F 13/14
Layout of fixed or moving closures, e.g. windows	E06B 3/54
Insulating glass windows	E06B 3/67
Optical devices made from glass	G02B 1/00
Alarm windows	G08B 13/04
Transparent shielding materials against electric or magnetic fields	H05K 9/0094

Special rules of classification

Laminated safety glass comprising at least one layer of inorganic glass, a resin interlayer and an external layer of a synthetic polymeric sheet or film is classified using the appropriate group selected from [B32B 17/10009](#) - [B32B 17/1099](#) together with the [B32B 2319/00](#) - [B32B 2386/00](#) orthogonal Indexing symbol that designates the polymeric material of said external polymer layer as a single symbol.

The presence of resin interlayers, their properties and/or their compositions are further specified in groups [B32B 17/1055](#) - [B32B 17/10798](#).

The resin interlayer or all components of a composite interlayer are to be considered a layer proper for [B32B](#) and can be made by any process, including a coating process.

If relevant, an allocation in [B32B 2250/02](#) - [B32B 2250/05](#) may be applied to classify the total number of layers in the composite interlayer, i.e. the total number of interlayers, intermediate layers and functional layers. For example, the laminated glazing shown in the figure of the third C-set example would be proper for [B32B 2250/03](#), which covers three layers, not [B32B 2250/05](#), which covers five layers, because of the three layers of the composite interlayer.

A laminated safety glass or glazing to be used in a head-up display should be classified in [B32B 2457/20](#) and not [B32B 2551/00](#).

If relevant, particles that are present in the glass layers, the durable polymer sheet, the intermediate layers and/or the resin interlayers can be classified in [B32B 2264/00](#)-[B32B 2264/504](#).

A laminated safety glass or glazing proper for [B32B 17/10009](#) - [B32B 17/1099](#) should not be separately classified in [B32B 27/00](#) - [B32B 27/42](#). Additional classification in [B32B 27/00](#) - [B32B 27/42](#) is only required when the laminated safety glass or glazing has (1) a further polymeric layer externally attached to the laminated safety glass or glazing; or (2) the composite interlayer is disclosed for separate use not in the form of a laminated safety glass or glazing.

If relevant, classification in [B32B 37/00](#) - [B32B 43/006](#) may be allocated in addition to [B32B 17/10807](#) - [B32B 17/1099](#) in order to capture invention information for the lamination process or apparatus that are not specifically provided for in the [B32B 17/10807](#) - [B32B 17/1099](#) subgroups.

If groups in [B32B 37/00](#) - [B32B 43/006](#) are to be allocated, the materials of the inorganic glass layer, interlayer or composite interlayer should not be separately classified as a single orthogonal indexing symbol. For example, the laminated glazing shown in the figure of the third C-set example should not have a single symbol allocated in [B32B 2315/08](#), [B32B 2367/00](#) or [B32B 2375/00](#).

Classification is applied as Invention (I) information for the subgroups corresponding to the materials indicated in the examples and disclosed as Inventive. In the absence of examples, the pertinent more general main groups or subgroups are allocated.

When [B32B 17/10005](#) is used as a base symbol in C-Sets, it is not allocated as a separate single symbol.

Combination sets (C-Sets):

C-Sets statement: #B32Ba

- In subgroup [B32B 17/10005](#), the polymeric material of an intermediate layer sandwiched between interlayers of a laminated safety glass or glazing is classified in the form of C-Sets.
- In #B32Ba, the base symbol, representing the laminated safety glass structure comprising an interlayer adjacent the glass, is taken from subgroup [B32B 17/10005](#), whereas the subsequent symbol representing the nature of the polymeric material of the intermediate layer sandwiched between interlayers is taken from the groups [B32B 2319/00](#) - [B32B 2386/00](#).
- When the polymeric intermediate layer comprises a mixture of polymeric materials taken from [B32B 2319/00](#) - [B32B 2386/00](#), separate C-Sets are given based on each polymeric material as the subsequent symbol.
- [B32B 17/10005](#) is not allocated as a separate single symbol when it is allocated as a base symbol in a C-Set.
- In #B32Ba C-Sets are always allocated as Invention information (I).

C-Sets syntax rules:

- Each C-Set shall contain exactly two symbols.
- Duplicate symbols are not allowed in these C-Sets.
- The order of symbols in these C-Sets is relevant as it reflects the laminated safety glass structure as the base symbol, followed by the polymeric material forming the intermediate layer as the subsequent symbol.

C-Sets examples:

- #B32Ba: In a safety glass laminate ([B32B 17/10005](#)) comprising outer glass panes and a composite interlayer comprising a polycarbonate sheet, the polycarbonate ([B32B 2369/00](#)) sandwiched between two polyvinyl butyral (PVB) interlayers is classified as ([B32B 17/10005](#), [B32B 2369/00](#)) and the PVB interlayers are classified as [B32B 17/10761](#).
- #B32Ba: In a safety glass ([B32B 17/10005](#)) comprising a first outer layer of glass, a second outer layer of rigid polymer and a composite interlayer adhering the first outer layer to the second outer layer, wherein composite interlayer has the layer structure: polyurethane/polyacrylate/polyurethane, the polyacrylate ([B32B 2333/08](#)) is the intermediate film is classified as ([B32B 17/10005](#), [B32B 2333/08](#)) and the polyurethane interlayers are classified as [B32B 17/1077](#).
- #B32Ba: In a glass laminate (see figure below) there is a thermoplastic top layer 12 of polycarbonate ([B32B 2369/00](#)), a bottom layer 16 formed of tempered glass, and a composite interlayer comprising an intermediate layer 14 of polyethylene terephthalate (PET) ([B32B 2367/00](#)) and two polyurethane adhesive (interlayers) 18 positioned between the top 12 and bottom 16 layers, and wherein the glass laminate is a laminated safety glass or glazing ([B32B 17/10005](#)). In this laminated safety glass or glazing, the PET intermediate layer 14 is classified as ([B32B 17/10005](#), [B32B 2367/00](#)), the polyurethane adhesive layers (interlayers) 18 are classified as [B32B 17/1077](#), and the polycarbonate top (outer) layer 12 is classified as [B32B 2369/00](#) as a single symbol.

12	Polycarbonate Outer Layer
18	Polyurethane Interlayer
14	PET Intermediate Layer
18	Polyurethane Interlayer
16	Tempered Glass

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Laminated safety glass or glazing, safety glazing, laminated glazing	Inorganic glass layer in sheet form bonded to another inorganic glass layer in sheet form or to a durable polymeric sheet or film via a resin interlayer, and wherein the interlayer keeps the laminated safety glass or glazing bonded even when struck or broken, preventing the glass from shattering.
Interlayer	An internal layer of thermoplastic polymer bonding the components of a laminated safety glass or glazing to one another.
Intermediate layer, intermediate film	An internal layer or film used as a barrier or as a carrier for functional layers and not having adhesive properties.
Plasticiser	Organic compound which reduces the glass transition temperature of the interlayer, usually an interlayer of PVB.
Composite interlayer	A composite laminate that binds the inorganic glass layer to another inorganic glass layer or the durable polymeric sheet or film of the laminated safety glass or glazing. The composite interlayer comprises at least one interlayer and may also comprise an intermediate layer and/or a functional layer.

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

PVB	Polyvinyl butyral
phr	Parts per hundred of resin - amount of plasticizer per 100 parts of PVB
IG	Insulation glass

B32B 17/10431

{Specific parts for the modulation of light incorporated into the laminated safety glass or glazing}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Optical filters	G02B 5/20
Polarising elements	G02B 5/30
Devices for the control of the intensity of light based on liquid crystals	G02F 1/13
Devices for the control of the intensity of light based on electrochromic elements	G02F 1/15
Devices for the control of the intensity of light based on electrophoresis	G02F 1/167
Devices for the control of the intensity of light based on suspension of oriented dipolar particles	G02F 1/172

B32B 17/10669

{Luminescent agents}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Optical brightening agents	C08K 5/0041
Luminescent agents	C09K 11/00

B32B 17/10917

{between two pre-positioned glass layers}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Making multi-layered products between preformed layers in general	B29C 39/126
Spacing elements for window units comprising two or more parallel panes	E06B 3/663

B32B 18/00

Layered products essentially comprising ceramics, e.g. refractory products

Definition statement

This place covers:

At least two pre-shaped green ceramic, ceramic pre-form (e.g. a ceramic fiber pre-form) or sintered ceramic layers are joined together, where the emphasis is not on the joining method. It also encompasses two layers of ceramic powders that are pressed together in a press. If after joining the two ceramic layers other type of layers, e.g. metallic or plastic layers are joined to the initial ceramic laminate, classification under other main groups of [B32B](#) will be necessary as well, but classification in [B32B 18/00](#) remains. If in between the two ceramic layers there is a thin, non-essential layer of another material, e.g. a metallic electrode, it is still classified in [B32B 18/00](#), but classification in other groups of [B32B](#) should be considered. [B32B 18/00](#) is normally not used for laminates containing identical ceramic layers, such as in multilayer capacitors.

[B32B 18/00](#) also contains cold bonding of ceramic substrates.

Relationships with other classification places

- applying ceramic coatings on metallic materials [C23](#);
- applying ceramic coatings on silicon for semi-conductor purposes [H10W](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Laminates containing only one ceramic layer	B32B 9/005
layered structures comprising at least one glass sheet	B32B 17/00
Printing on laminates	B32B 38/14
semi-permeable membranes made of inorganic material	B01D 71/02
ceramic coatings on glass	C03C 17/00
Clay-wares	C04B 33/00
ceramic layers characterised by their composition	C04B 35/00
Joining a ceramic layer to another layer	C04B 37/00
porous ceramic products	C04B 38/00
Coatings of ceramics	C04B 41/45
Aspects relating to ceramic starting mixtures or sintered ceramic products	C04B 2235/00
Aspects relating to ceramic laminates or to joining of ceramic articles with other articles by heating	C04B 2237/00
sensor elements of laminated structure containing a solid electrolyte	G01N 27/4071
Stacked fixed capacitors, e.g. multilayer ceramic capacitors	H01G 4/30

Special rules of classification

Under [C04B 37/00](#) the emphasis is on how the articles are joined. If two ceramic layers are joined, but the emphasis is not on how they are joined, classification would be in [B32B 18/00](#).

Secondary aspects of making ceramic laminates ([B32B 18/00](#)) and of joining ceramic articles with other articles through heating ([C04B 37/00](#)) are classified with Indexing Code [C04B 2237/00](#), e.g. the composition of the layers or articles that are laminated or joined.

Aspects regarding the heat treatments that are used for laminating are classified in [C04B 35/64](#) and with Indexing Code [C04B 2235/65](#), where the heat treatment of the laminating step should be considered as a sintering step. If for instance pressure is exerted during heating to laminate the articles, [C04B 35/645](#) should be given. Aspects regarding the atmosphere of the heating step, possible annealing steps, heating rate, cooling rate, etc. are given Indexing Code [C04B 2235/65](#).

If much detail regarding the composition and/or synthesis of one or more ceramic layers or articles is given, classification in [C04B 35/00](#) should be considered.

Electrode and electrodes layers that are inserted between ceramic substrate layers are normally not seen as interlayers, since they normally do not have the function of joining the two ceramic substrates. They therefore do not receive a [C04B 2237/12](#) Indexing Code. Only if it is clear that the electrode does have a joining effect, would it be regarded as an interlayer, and an Indexing Code under [C04B 2237/12](#) would be allocated. In that case [C04B 37/006](#) has to be used and there is no classification in [B32B 18/00](#).

B32B 19/00

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

Definition statement

This place covers:

Layered products characterised by having a layer made of naturally occurring mineral fibres or particles.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layered products characterised by having a layer of rockwool fibres	B32B 5/02 , B32B 2262/108
---	--

Special rules of classification

Product features classified in this group are also classified in [B32B 5/00](#).

B32B 19/02

{the layer of fibres or particles being impregnated or} embedded in a plastic substance

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Products characterised by a plastic layer with natural mineral fibres or particles being present as additives	B32B 25/02 , B32B 27/18
---	---

B32B 21/00

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

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Working veneer or plywood	B27D
Treating of wood	B27K
Manufacturing articles made of fibres or particles of wood	B27N

Special rules of classification

- Coating on a wood layer is classified with an appropriate Indexing symbol in [B32B 2255/00](#).
- Impregnation of a wood layer is classified with an appropriate Indexing symbol in [B32B 2260/00](#).

B32B 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}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Products characterised by having fibrous or filamentary layer made of a cellulosic plastic substance	B32B 5/02 , B32B 2262/00 - B32B 2262/14
Layered products characterised by having a particulate layer made of a cellulosic plastic substance	B32B 5/16 , B32B 2264/00 - B32B 2264/12

B32B 25/00

Layered products comprising {a layer of} natural or synthetic rubber {(fibrous or filamentary layer made of a natural or synthetic rubber [B32B 5/02](#); particulate layer made of a natural or synthetic rubber [B32B 5/16](#); foamed layer made of a natural or synthetic rubber [B32B 5/18](#))}

Definition statement

This place covers:

Layered products characterised by a layer of thermosetting synthetic rubber.

Relationships with other classification places

- Layered products characterised by having a fibrous or filamentary layer made of a natural or synthetic rubber are classified in [B32B 5/00](#) and in [B32B 2262/00](#) – [B32B 2262/14](#).
- Layered products characterised by having a particulate layer made of a natural or synthetic rubber are classified in [B32B 5/00](#) and in [B32B 2264/0207](#).

Relationships with other classification places

- Layered products characterised by having a foamed layer made of a natural or synthetic rubber are classified in [B32B 5/00](#) and in [B32B 2266/0207](#).

References

Limiting references

This place does not cover:

Layered products characterised by having a fibrous or filamentary layer made of a natural or synthetic rubber	B32B 5/02
Layered products characterised by having a particulate layer made of a natural or synthetic rubber	B32B 5/16
Layered products characterised by having a foamed layer made of a natural or synthetic rubber	B32B 5/18

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layered product having a layer comprised of a thermoplastic elastomer	B32B 2274/00
Manufacture of polymeric films or sheets	C08J 5/00
Compositions of macromolecular compounds	C08L

Special rules of classification

- Layered products wherein all layers are polymeric are classified in [B32B 2250/24](#).
- Coating on a layer of natural or synthetic rubber is classified with an appropriate Indexing symbol in [B32B 2255/00](#).

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Thermosetting Rubber	Vulcanized rubber that cannot be re-melted or remolded without destroying its original characteristics.
Vulcanization	An irreversible process during which a rubber compound through a change in its chemical structure (for example, cross-linking) becomes less plastic and more resistant to swelling by organic liquids and elastic properties are conferred, improved, or extended over a greater range of temperature.

B32B 25/02

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

Relationships with other classification places

- Products characterised by a fibrous or filamentary layer embedded or impregnated in a natural or synthetic rubber are classified in [B32B 5/02](#) and [B32B 2260/048](#).
- Products characterised by a particulate layer embedded or impregnated in a natural or synthetic rubber are classified in [B32B 5/16](#) and [B32B 2260/048](#).

Special rules of classification

- The nature of the fibres or filaments present as additives is classified in [B32B 2262/00](#).

- The nature of the particles present as additives is classified in [B32B 2264/00](#).

B32B 27/00

Layered products comprising {a layer of} synthetic resin {(fibrous or filamentary layer made of a synthetic resin [B32B 5/02](#); particulate layer made of a synthetic resin [B32B 5/16](#); foamed layer made of a synthetic resin [B32B 5/18](#))}

Definition statement

This place covers:

Layered products characterised by a layer of a synthetic resin other than a cellulosic plastic resin or a thermosetting synthetic rubber.

Relationships with other classification places

- Layered products characterised by having a fibrous or filamentary layer made of synthetic resin are classified in [B32B 5/00](#) and in [B32B 2262/00](#) - [B32B 2262/14](#).
- Layered products characterised by having a particulate layer made of a synthetic resin are classified in [B32B 5/00](#) and in [B32B 2264/00](#) - [B32B 2264/12](#).
- Layered products characterised by having a foamed layer made of a synthetic resin are classified in [B32B 5/00](#) and in [B32B 2266/00](#) - [B32B 2266/14](#).

References

Limiting references

This place does not cover:

Layered products characterised by having a fibrous or filamentary layer made of synthetic resin	B32B 5/02
Layered products characterised by having a particulate layer made of a synthetic resin	B32B 5/16
Layered products characterised by having a foamed layer made of a natural or synthetic rubber	B32B 5/18

Informative references

Attention is drawn to the following places, which may be of interest for search:

Manufacture of polymeric films or sheets	C08J 5/00
Compositions of macromolecular compounds	C08L

Special rules of classification

- A layer of thermoplastic elastomer is classified in [B32B 2274/00](#) and also at the appropriate place in [B32B 27/00](#) if the nature of the polymer is also known or specified.
- Layered products wherein all layers are polymeric are classified in [B32B 2250/24](#).
- Coating on a layer of synthetic resin is classified with an appropriate Indexing symbol in [B32B 2255/00](#).

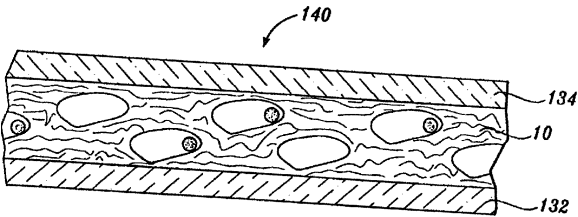
B32B 27/205

{the fillers creating voids or cavities, e.g. by stretching}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B32B 27/30

comprising vinyl {(co)polymers; comprising acrylic (co)polymers}

Special rules of classification

Layered products wherein all layers are made of polymers belonging to [B32B 27/30](#) and [B32B 27/32](#) are classified in [B32B 2250/246](#).

B32B 27/32

comprising polyolefins {(comprising vinyl (co)polymers or acrylic (co)polymers [B32B 27/30](#))}

References

Limiting references

This place does not cover:

Layer comprising a layer of synthetic resin comprising vinyl (co)polymers or acrylic (co)polymers	B32B 27/30
---	----------------------------

Special rules of classification

- Layered products wherein all layers are made of polymers belonging to [B32B 27/32](#) are classified in [B32B 2250/242](#).
- Layered products wherein all layers are made of polymers belonging to [B32B 27/30](#) and [B32B 27/32](#) are classified in [B32B 2250/246](#).

B32B 27/36**comprising polyesters****Special rules of classification**

Layered products wherein all layers are made of polymers belonging to [B32B 27/36](#) are classified in [B32B 2250/244](#).

B32B 29/00**Layered products comprising {a layer of} paper or cardboard****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Impregnation or coating of paper; special paper	D21H
---	----------------------

Special rules of classification

- Layered products wherein all layers are made of paper or paperboard are classified in [B32B 2250/26](#).
- Coating on a paper or paperboard layer is classified with an appropriate Indexing symbol in [B32B 2255/00](#).
- Impregnation of a paper or paperboard layer is classified with an appropriate Indexing symbol in [B32B 2260/00](#).

B32B 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

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Surface unevennesses or non-uniformities	B32B 3/00
--	---------------------------

Special rules of classification

Properties should as far as possible be classified in [B32B 2307/00](#)

B32B 37/00**Methods or apparatus for laminating, e.g. by curing or by ultrasonic bonding****Relationships with other classification places**

Making products characterised by particular features of structure or of composition, see the relevant groups for such products, e.g. [B32B 1/00](#), [B32B 9/00](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Making layered products containing glass and synthetic resin layers	B32B 17/10807
Applying liquids or other fluent materials to surface, e.g. coating	B05
Extrusion moulding, e.g. coextrusion	B29C 48/00
Lining or sheathing with preformed layers of plastic an object which cannot be seen as a layer	B29C 63/00
Joining or sealing of preformed plastic parts	B29C 65/00
Joining a relatively small portion of the surface of plastic articles	B29C 66/43
Making composites	B29C 70/00
Corrugating paper combined with laminating	B31F 1/20
Associating two or more webs	B65H 39/16

Special rules of classification

Coextrusion steps are classified in [B32B 37/153](#) or [B32B 37/156](#) as long as the coextruded layers are joined with at least one additional layer.

Coating steps are classified in [B32B 2037/243](#) as long as the coated layers are joined with at least one additional layer.

B32B 37/0038

{involving application of liquid to the layers prior to lamination, e.g. wet laminating ([B32B 37/12](#) takes precedence)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Applying liquids in general	B05
-----------------------------	---------------------

B32B 37/025

{Transfer laminating}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Labelling	B65C 9/00
-----------	---------------------------

Special rules of classification

Particular aspects directed to removing the carrier layers are classified in [B32B 38/10](#).

B32B 37/1027**{Pressing using at least one press band}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Pressing means with cooperating endless bands in general	B30B 5/06
--	---------------------------

B32B 37/18**involving the assembly of discrete sheets or panels only****Glossary of terms***In this place, the following terms or expressions are used with the meaning indicated:*

Discrete sheets or panels	Dimension of sheets or panels is determined at the instant when sheets or panels come into contact.
---------------------------	---

B32B 37/20**involving the assembly of continuous webs only****Glossary of terms***In this place, the following terms or expressions are used with the meaning indicated:*

Continuous webs	Dimension of webs or layers is determined at the instant when webs or layers come into contact.
-----------------	---

B32B 37/22**involving the assembly of both discrete and continuous layers****Glossary of terms***In this place, the following terms or expressions are used with the meaning indicated:*

Discrete and continuous layers	Dimension of layers is determined at the instant when layers come into contact.
--------------------------------	---

B32B 38/00**Ancillary operations in connection with laminating processes****Relationships with other classification places**

Operations implemented on layered products not in connection with the lamination process are classified in [B32B 43/00](#) or in fields related to said operations.

B32B 38/0008

{Electrical discharge treatment, e.g. corona, plasma treatment; wave energy or particle radiation (heat treatment [B32B 38/0036](#))}

References**Limiting references**

This place does not cover:

Heat treatment	B32B 38/0036
----------------	------------------------------

Informative references

Attention is drawn to the following places, which may be of interest for search:

Surface shaping	B29C 59/00
-----------------	----------------------------

Special rules of classification

Laminate treatment is additionally classified in groups [B32B 2310/00](#) - [B32B 2310/14](#).

B32B 38/0032

{increasing porosity ([B32B 38/04](#) takes precedence)}

References**Limiting references**

This place does not cover:

Punching, slitting or perforating	B32B 38/04
-----------------------------------	----------------------------

Informative references

Attention is drawn to the following places, which may be of interest for search:

Permeability to gases	B32B 2307/724
Permeability to liquids	B32B 2307/726

B32B 38/10

Removing layers, or parts of layers, mechanically or chemically

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Punching, slitting or perforating without removing material	B32B 38/04
Delamination of layered products not in connection with the lamination process	B32B 43/006
Removing scrap from containers, e.g. removing labels	B08B 9/083
Removing applied preformed layers or sheets used as a coating	B29C 63/0013

B32B 38/14**Printing or colouring****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Printing	B41M
----------	----------------------

B32B 39/00**Layout of apparatus or plants, e.g. modular laminating systems****Definition statement**

This place covers:

The layout of stations in a manufacturing line.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Constructional aspects of laminating apparatus	B32B 37/0046
--	------------------------------

B32B 41/00**Arrangements for controlling or monitoring lamination processes; Safety arrangements****Definition statement**

This place covers:

- Arrangements for controlling or monitoring lamination parameters;
- Arrangements for detecting defaults and taking corrective measures;
- Arrangements for controlling quality.

B32B 43/00**Operations specially adapted for layered products and not otherwise provided for, e.g. repairing; Apparatus therefor****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Operations carried out during or in connection with lamination process	B32B 37/00 , B32B 38/00
--	---

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Specially adapted for layered products	The layered structure of the product governs the operations or the apparatus structure.
--	---

B32B 43/006

{Delaminating}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Removing layers or parts of layers carried out during or in connection with the lamination process	B32B 38/10
Removing scrap from containers, e.g. removing labels	B08B 9/083
Removing applied preformed layers or sheets used as a coating	B29C 63/0013

B32B 2260/021

Fibrous or filamentary layer

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layers of natural mineral fibres or particles being impregnated or embedded in a plastic substance	B32B 19/02
--	----------------------------

B32B 2260/025

Particulate layer

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layers of natural mineral fibres or particles being impregnated or embedded in a plastic substance	B32B 19/02
--	----------------------------

B32B 2262/0253**Polyolefin fibres****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Vinyl resin fibres forming fibrous or filamentary layer or present as additives	B32B 2262/0223
Acrylic resin fibres forming fibrous or filamentary layer or present as additives	B32B 2262/0246

B32B 2262/10**Inorganic fibres****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Layered products comprising natural mineral fibres or particles, e.g. asbestos, mica	B32B 19/00
--	----------------------------

B32B 2264/10**Inorganic particles****Definition statement**

This place covers:

Inorganic particles in compositions which form a particulate layer or being present as additives.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Layered products comprising a layer of natural mineral particles	B32B 19/00
--	----------------------------

B32B 2266/025**Polyolefin****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Foam composed of vinyl resin	B32B 2266/0221
Foam composed of acrylic resin	B32B 2266/0242

B32B 2274/00**Thermoplastic elastomer material****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Thermoplastic elastomer fibres forming fibrous or filamentary layer or present as additives	B32B 2262/0215
Thermoplastic elastomer particles forming particulate layer or present as additives	B32B 2264/0221
Thermoplastic elastomer composing a foam	B32B 2266/0292

B32B 2307/308**Heat stability****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Dimensional stability of the layers or laminate	B32B 2307/734
---	-------------------------------

B32B 2307/40**having particular optical properties****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Layers or laminate resistive to light or UV	B32B 2307/71
---	------------------------------

B32B 2317/22**Natural rubber****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Synthetic rubber used for the layers, laminate or apparatus components	B32B 2319/00
--	------------------------------

B32B 2319/00**Synthetic rubber****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Natural rubber used for the layers, laminate or apparatus components	B32B 2317/22
--	------------------------------

B32B 2405/00**Adhesive articles, e.g. adhesive tapes****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Labels or badges	B32B 2519/00
------------------	------------------------------

B32B 2413/00**Belts****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Conveyor belts	B32B 2433/02
Driving belts	B32B 2433/04

B32B 2419/00**Buildings or parts thereof****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Walls or panels	B32B 2607/00
-----------------	------------------------------

B32B 2419/04**Tiles for floors or walls****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Roofs or roof membranes	B32B 2419/06
-------------------------	------------------------------

B32B 2432/00**Cleaning articles, e.g. mops or wipes****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Personal care	B32B 2555/00
---------------	------------------------------

B32B 2437/00**Clothing****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Defensive protective equipment, e.g. armour plates or anti-ballistic clothing	B32B 2571/02
---	------------------------------

B32B 2439/00**Containers; Receptacles****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Closures, end caps or stoppers	B32B 2435/00
--------------------------------	------------------------------

B32B 2451/00**Decorative or ornamental articles****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Wall papers or wall coverings	B32B 2607/02
-------------------------------	------------------------------

B32B 2479/00**Furniture****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Upholstery	B32B 2601/00
------------	------------------------------

B32B 2535/00**Medical equipment, e.g. bandage, prostheses or catheter****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Patches, e.g. medical patches or repair patches	B32B 2556/00
---	------------------------------

B32B 2571/02**defensive, e.g. armour plates or anti-ballistic clothing****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Nets, e.g. camouflage nets	B32B 2459/00
----------------------------	------------------------------

B32B 2605/18**Aircraft****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Vanes, blades, propellers or rotors with blades	B32B 2603/00
---	------------------------------