

## B27K

**PROCESSES, APPARATUS OR SELECTION OF SUBSTANCES FOR IMPREGNATING, STAINING, DYEING, BLEACHING OF WOOD OR SIMILAR MATERIALS, OR TREATING OF WOOD OR SIMILAR MATERIALS WITH PERMEANT LIQUIDS, NOT OTHERWISE PROVIDED FOR (applying liquids or other fluent materials to surfaces in general [B05](#); coating wood or similar material [B44D](#)); CHEMICAL OR PHYSICAL TREATMENT OF CORK, CANE, REED, STRAW OR SIMILAR MATERIALS**

### Definition statement

*This place covers:*

Methods and apparatus for the following treatments of wood:

- Dampening;
- Impregnating;
- Staining;
- Dyeing;
- Bleaching;
- Softening;
- Hardening; and
- other methods and apparatus for treating of wood with permeant liquids, unless provided for in other subclasses.

Methods and apparatus for bleaching or impregnating wood in combination with drying;

Methods and apparatus for chemical or physical treatment of cork;

Methods and apparatus for chemical or physical treatment of cane, reed, straw, bamboo or similar fibrous material of plant origin;

Selection (i.e. use) of chemical substances for the treatments covered by this subclass, unless provided for in other subclasses.

### Relationships with other classification places

This subclass covers the selection of chemical substances, i.e. the use thereof, for the treatments covered by the subclass. Substances or compositions per-se are not covered by this subclass.

The structure or composition of the chemical substances selected is covered by pure chemistry classes [C01](#), [C07](#), or [C08](#). Special activities or special properties of the chemical substances selected are covered in places for these activities or properties, for example in [A01N](#) (biocides), [A62D 1/00](#) (fire extinguishing compositions), [C09B](#) (dyes), [C09D](#) (stains) or [C09K](#) (anti-oxidant compositions or fireproofing materials).

### References

#### Limiting references

*This place does not cover:*

Biocidal compositions	<a href="#">A01N</a>
Fire-extinguishing compositions	<a href="#">A62D 1/00</a>
Coating wood	<a href="#">B05D 7/06</a>
Planing, drilling, milling, or turning wood	<a href="#">B27C</a>

Mechanical working of veneer or plywood	<a href="#">B27D</a>
Applying adhesives or glue to surfaces of wood to be joined	<a href="#">B27G 11/00</a>
Bending wood	<a href="#">B27H 1/00</a>
Mechanical working of cane, cork, or of tree or plant material not otherwise provided for	<a href="#">B27J</a>
Debarking, splitting wood, manufacture of veneer, wooden sticks, wood shavings, chips, powder, or the like	<a href="#">B27L</a>
Compressing, punching out, burning or charring wood	<a href="#">B27M 1/00</a>
Manufacture or reconditioning of specific semi-finished or finished wood articles	<a href="#">B27M 3/00</a>
Manufacture of articles made by dry processes from particles or fibres consisting of wood or other lignocellulosic or like organic material; after-treatment of these articles	<a href="#">B27N</a>
Impregnation of stoppers for bottles, jars, or similar containers	<a href="#">B67B 1/03</a>
Impregnation of matches	<a href="#">C06F</a>
Water repellent compositions of oils, fats or waxes or of derivatives thereof	<a href="#">C08L 91/00</a>
Woodstains	<a href="#">C09D 15/00</a>
Drying-oils, siccatives	<a href="#">C09F</a>
Fireproofing materials	<a href="#">C09K 21/00</a>
Paper-pulp impregnation	<a href="#">D21H</a>
Impregnation and after-treatment of fibreboard manufactured by wet processes	<a href="#">D21J</a>
Protection of building elements, e.g. against pests or fire	<a href="#">E04B 1/62</a>
Drying solid materials	<a href="#">F26B</a>
Treatment of materials for manufacturing musical instruments	<a href="#">G10D</a>

### **Informative references**

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

Apparatus for applying liquids or other fluent materials to surfaces	<a href="#">B05C</a>
Multilayer materials (essentially comprising wood <a href="#">B32B 21/00</a> ; impregnation, colouring <a href="#">B32B 38/00</a> )	<a href="#">B32B</a>
Artistic painting or surface treatment	<a href="#">B44D</a>
Compositions inhibiting chemical change, e.g. of antioxidants	<a href="#">C09K 15/00</a>
Building materials, also made of wood	<a href="#">E04C 2/00</a>
Roof coverings, also made of wood	<a href="#">E04D</a>
Flooring made of wood	<a href="#">E04F 15/04</a>

### **Glossary of terms**

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

Dampening	Treating wood for increasing its water content (e.g. by steaming)
-----------	---

Dyeing	Treating a material with a soluble colouring substance that has an affinity to the material to which it is applied (as opposed to colouring with a pigment, which is usually insoluble)
Impregnation	Incorporation of a substance into the pores of a material by absorption, adsorption or penetration
OSB	Oriented strand board
Staining	Treating a surface with a paint that is formulated to transport the pigment into the pores of the surface, rather than creating a film on top of the surface
Thermal treatment	Treatment of wood at temperatures well over 100°C allowing for the modification of its chemical structure
Wood	Natural whole wood, or wood-based products other than those made from fibres or particles, for example plywood or laminated veneer lumber

## B27K 1/00

### Damping wood

#### Definition statement

*This place covers:*

Methods and apparatus for increasing the water content of the wood. The main purpose of such treatments is to prevent cracking of wood by overdrying.

#### Relationships with other classification places

Steam drying wood is covered by [F26B](#).

#### Glossary of terms

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

Dampening or damping	Humidifying, moistening
----------------------	-------------------------

## B27K 3/00

**Impregnating wood, {e.g. impregnation pretreatment, for example puncturing; Wood impregnation aids not directly involved in the impregnation process} (dyeing, staining [B27K 5/00](#))**

#### Definition statement

*This place covers:*

Methods and apparatus for impregnating wood and for pre- and after-treatments related to wood impregnation.

#### References

##### Limiting references

*This place does not cover:*

Biocides, Pest repellants	<a href="#">A01N</a>
---------------------------	----------------------

Fire-extinguishing compositions	<a href="#">A62D 1/00</a>
Coating wood	<a href="#">B05D 7/06</a>
Manufacture of articles made by dry processes from particles or fibres consisting of wood or other lignocellulosic or like organic material; after-treatment of these articles	<a href="#">B27N</a>
Impregnation of stoppers for bottles, jars, or similar containers	<a href="#">B67B 1/03</a>
Impregnation of matches	<a href="#">C06F</a>
Water repellent compositions of oils, fats or waxes or of derivatives thereof	<a href="#">C08L 91/00</a>
Woodstains	<a href="#">C09D 15/00</a>
Drying-oils	<a href="#">C09F 5/00</a>
Siccatives	<a href="#">C09F 9/00</a>
Fireproofing materials	<a href="#">C09K 21/00</a>
Paper-pulp impregnation	<a href="#">D21H</a>
Impregnation and after-treatment of fibreboard manufactured by wet processes	<a href="#">D21J</a>
Protection of building elements, e.g. against pests or fire	<a href="#">E04B 1/62</a>
Treatment of materials for manufacturing musical instruments	<a href="#">G10D</a>

### Glossary of terms

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

Active component	A component of an impregnation mixture which is essential for the purpose of the impregnation. Solvents, surfactants, thickeners, and the like are normally not falling within this definition
------------------	--

### B27K 3/002

**{employing compositions comprising microorganisms}**

#### Relationships with other classification places

Compositions employing microorganisms are covered by [C12N](#). Processes using microorganisms in general are covered by [C12R](#), apparatus thereof by [C12M](#), measuring and testing by [C12Q](#).

### B27K 3/005

**{employing compositions comprising microparticles}**

#### Relationships with other classification places

Biocidal compositions characterised by their form are covered by [A01N 25/00](#).

### Glossary of terms

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

Microparticles	Particles with diameters between 0.1-100 microns
----------------	--

**B27K 3/007****{employing compositions comprising nanoparticles}****Relationships with other classification places**Biocidal compositions characterised by their form are covered by [A01N 25/00](#).**Glossary of terms***In this place, the following terms or expressions are used with the meaning indicated:*

Nanoparticles	particles with diameters between 1-100 nm
---------------	---

**B27K 3/0221****{Pore opening ([B27K 3/0214](#) takes precedence)}****Definition statement***This place covers:*

Pre-treatments aimed to open the wood pores, excepting drying.

**B27K 3/0242****{using melt impregnation}****Definition statement***This place covers:*

Impregnation processes employing melted solids.

**B27K 3/0264****{using staples or nails}****Definition statement***This place covers:*

Impregnation processes employing staples or nails made of materials with biocidal properties.

**B27K 3/0271****{Vapour phase impregnation}****Definition statement***This place covers:*

Impregnation processes employing biocides in vapour phase.

**B27K 3/0292**

{for improving fixation ([B27K 3/0285](#) takes precedence)}

**Special rules of classification**

Polymer impregnation for improving the fixation of an impregnation agent should be not classified here, but only in [B27K 3/15](#) and/or its subgroups.

**B27K 3/083**

{along the fibers, i.e. longitudinal impregnation}

**Definition statement**

*This place covers:*

Impregnation processes employing a pressure gradient along the wood fibres.

**B27K 3/14****Bandage methods****Definition statement**

*This place covers:*

Impregnation processes employing a bandage for storing and releasing the impregnation agent.

**B27K 3/15**

**Impregnating involving polymerisation {including use of polymer-containing impregnating agents (macromolecular compounds derived from lignocellulosic materials [C08H](#); compositions of lignin-containing materials [C08L 97/02](#))}**

**Definition statement**

*This place covers:*

Impregnation processes involving the use of polymerized or polycondensed substances.

**Relationships with other classification places**

Macromolecular compounds derived from lignocellulosic materials are covered by [C08H](#).

Compositions of lignocellulosic containing materials are covered by [C08L 97/02](#).

**Special rules of classification**

The documents of this head group are classified additionally in [C08L 101/16](#) and [C08K](#) for information regarding the chemical nature of the polymer composition employed in impregnation.

**B27K 3/153**

{Without in-situ polymerisation, condensation, or cross-linking reactions}

**Definition statement**

*This place covers:*

Impregnation processes involving substances polymerized or polycondensed before impregnation.

### Special rules of classification

The documents of this subgroup are classified additionally in [C08L 101/16](#) and [C08K](#) for information regarding the chemical nature of the polymer composition employed in impregnation.

## B27K 3/156

**{Combined with grafting onto wood fibres}**

### Definition statement

*This place covers:*

Impregnation processes involving the use of polymerized or polycondensed substances which react with the chemical structure of wood.

### Special rules of classification

The documents of this subgroup are classified additionally in [C08L 101/16](#) and [C08K](#) for information regarding the chemical nature of the polymer composition employed in impregnation.

## B27K 3/16

**Inorganic impregnating agents**

### Relationships with other classification places

Inorganic biocidal compositions are covered by [A01N](#).

### Special rules of classification

This head group covers impregnation processes involving the use of inorganic substances either not covered by the subgroups [B27K 3/163](#) - [B27K 3/32](#), or when their chemical nature is not especially relevant.

This head group and its subgroups [B27K 3/163](#) - [B27K 3/30](#) refer only to the active components of the impregnation mixtures.

## B27K 3/32

**Mixtures of different inorganic impregnating agents**

### Special rules of classification

This subgroup covers impregnation processes characterized by the presence of a synergistic effect caused by at least two active inorganic components. The active inorganic components should be classified in their specific subgroups [B27K 3/163](#) - [B27K 3/30](#), too.

## B27K 3/34

**Organic impregnating agents {(polymers [B27K 3/15](#))}**

### Relationships with other classification places

Organic biocidal compositions are covered by [A01N](#).

### Special rules of classification

This head group covers impregnation processes involving the use of organic substances either not covered by the subgroups [B27K 3/343](#) - [B27K 3/48](#), or when their chemical nature is not especially relevant.

This head group and its subgroups [B27K 3/343](#) - [B27K 3/48](#) refer only to the active components of the impregnation mixtures.

## B27K 3/346

{Grafting onto wood fibres ([B27K 3/156](#) takes precedence; macromolecular compounds derived from lignocellulosic materials [C08H](#))}

### Definition statement

*This place covers:*

Impregnation processes involving the use of organic substances which react with the chemical structure of wood.

## B27K 3/50

Mixtures of different organic impregnating agents

### Special rules of classification

This subgroup covers impregnation processes characterized by the presence of a synergistic effect caused by at least two active organic components. The active organic components should be classified in their specific subgroups [B27K 3/343](#) - [B27K 3/48](#), too.

## B27K 3/52

Impregnating agents containing mixtures of inorganic and organic compounds

### Special rules of classification

This subgroup covers impregnation processes characterized by the presence of a synergistic effect caused by at least one inorganic and at least one organic component. The active components should be classified in their specific subgroups [B27K 3/163](#) - [B27K 3/30](#) and [B27K 3/343](#) - [B27K 3/48](#), respectively, too.

## B27K 5/00

Treating of wood not provided for in groups [B27K 1/00](#), [B27K 3/00](#)

### References

#### Limiting references

*This place does not cover:*

Coating wood	<a href="#">B05D 7/06</a>
Planing, drilling, milling, or turning wood	<a href="#">B27C</a>
Mechanical working of veneer or plywood	<a href="#">B27D</a>
Applying adhesives or glue to surfaces of wood to be joined	<a href="#">B27G 11/00</a>
Bending wood	<a href="#">B27H 1/00</a>
Mechanical working of cane, cork, or of tree or plant material not otherwise provided for	<a href="#">B27J</a>
Debarking, splitting wood, manufacture of veneer, wooden sticks, wood shavings, chips, powder, or the like	<a href="#">B27L</a>
Compressing, punching out, burning or charring wood	<a href="#">B27M 1/00</a>

Manufacture or reconditioning of specific semi-finished or finished wood articles	<a href="#">B27M 3/00</a>
Manufacture of articles made by dry processes from particles or fibres consisting of wood or other lignocellulosic or like organic material; after-treatment of these articles	<a href="#">B27N</a>
Woodstains	<a href="#">C09D 15/00</a>
Drying solid materials	<a href="#">F26B</a>
Treatment of materials for manufacturing musical instruments	<a href="#">G10D</a>

## B27K 5/04

### Combined bleaching or impregnating and drying of wood

#### Special rules of classification

Pre-drying before impregnation is covered by [B27K 3/0214](#). The polymerizing, condensation, or cross-linking of the impregnating compositions comprising monomers or polymers is normally not covered by this group.

## B27K 5/06

### Softening or hardening of wood

#### Special rules of classification

Processes inherently leading to softening or hardening, like dampening, polymer impregnation, or thermal treatment are classified here only in connection with a special effect.

## B27K 7/00

### Chemical or physical treatment of cork (mechanical working of cork [B27J 5/00](#))

#### References

##### Limiting references

*This place does not cover:*

Mechanical working of cane, cork, or of tree or plant material not otherwise provided for	<a href="#">B27J</a>
Impregnation of stoppers for bottles, jars, or similar containers	<a href="#">B67B 1/03</a>
Drying solid materials	<a href="#">F26B</a>

#### Special rules of classification

Documents of this head group may be classified in [B27K 1/00-B27K 5/06](#) for additional information.

**B27K 9/00**

Chemical or physical treatment of reed, straw, or similar material (mechanical working of cane or the like [B27J 1/00](#))

**References****Limiting references**

*This place does not cover:*

Mechanical working of cane, cork, or of tree or plant material not otherwise provided for	<a href="#">B27J</a>
Protection of building elements, e.g. against pests or fire	<a href="#">E04B 1/62</a>
Drying solid materials	<a href="#">F26B</a>

**Special rules of classification**

Documents of this head group may be classified in [B27K 1/00-B27K 5/06](#) for additional information.