

## B22C

### FOUNDRY MOULDING (moulding refractory materials in general B28B)

#### Definition statement

*This subclass/group covers:*

Methods, machines and materials for manufacturing moulds or cores used in a foundry; the necessary patterns, accessory devices or tools.

#### Informative references

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

Shaping clay or other ceramic substances	<a href="#">B28B</a>
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#### Special rules of classification within this subclass

The following IPC groups are not used in the internal ECLA classification scheme.

Subject matter covered by these groups is classified in the following ECLA groups :

[B22C 3/02](#) covered by [B22C 3/00](#)

[B22C 5/13](#) covered by [B22C 5/12](#)

[B22C 7/05](#) covered by [B22C 7/04](#)

[B22C 9/11](#) covered by [B22C 9/10](#)

[B22C 9/14](#) covered by [B22C 9/12](#)

[B22C 9/16](#) covered by [B22C 9/12](#)

[B22C 15/264](#) to [B22C 15/276](#) covered by [B22C 15/23](#)

[B22C 19/01](#) covered by [B22C 19/00](#)

#### Glossary of terms

*In this subclass/group, the following terms (or expressions) are used with the meaning indicated:*

Vacuum sealed moulding	a moulding process wherein a heated pattern is covered with a plastic
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	sheet; a box of loose moulding sand is placed over the pattern and a vacuum is applied to the sand which then conforms to the shape of the sheet; after casting, the vacuum is released and the loose sand falls away from the casting product
Chaplet	metal support that holds a core in place within a mould; molten metal solidifies around the chaplet and fuses it into the finished casting
Stack moulds	a composite mold made up of stacked sections, each of which produces a complete gate of castings, and poured from a central downgate.
Breaker core	a core placed in a casting mould between the feeder and the casting cavity; the core provides for a reduced feeder-to-casting contact and enables feeders easily to be broken off from the cast products
Investing a lost pattern	method of moulding using a pattern of wax, plastic, or other material which is coated by a moulding material in slurry or liquid form to be dried and hardened afterwards
Lost pattern	a pattern (or model) which is destroyed after forming the mould; this can be done by melting out (in the case of a wax pattern) or by burning during casting (in the case of a foam pattern)
Core box	a box or mould, usually divisible and metallic, in which cores are moulded
Feeder head	a reservoir of molten metal connected to a casting to provide additional metal to the casting, required as the result of shrinkage before and during solidification
Pattern plate	a plate foreseen with a pattern to realise at least one mould part (cope

	or drag); the plate can have only on one side a half pattern, able to realise cope or drag (single sided pattern) or the plate is foreseen on both sides with a half pattern, able to realise both cope and drag (double sided pattern plate or matchplate)
Stripping plate	a plate which prevents moulding material from dislodging, when removing the pattern from the mould
Sprue	the mould channel that connects the pouring basin with the runner or, in the absence of a pouring basin , directly into which molten metal is poured
Permanent moulds	moulds which are used more than once
Semi -permanent moulds	moulds of which a part is used more than once, while the other part has to be renewed after each casting cycle
Flask	a metal frame used for making and holding a refractory mould

## **B22C 1/00**

**Compositions of refractory mould or core materials; Grain structures thereof (refractory materials in general C04B35/00); Chemical or physical features in the formation or manufacture of moulds**

### **Definition statement**

*This subclass/group covers:*

These groups cover:

the compositions of the materials used, the grain structures thereof and chemical or physical features to obtain the mould or core products

### **Informative references**

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

Refractory materials in general	<a href="#">C04B 35/00</a>
macromolecular compounds	<a href="#">C08G</a>
use of lost patterns	<a href="#">B22C 9/04</a>
investing a lost pattern	<a href="#">B22C 13/085</a>

### Special rules of classification within this group

[B22C 1/02](#) - [B22C 1/14](#) and subgroups cover the use of additives for special purposes; if this additives are specific binding agents, then in addition a class in the range [B22C 1/16](#) - [B22C 1/26](#) is also given

### B22C 3/00

**Selection of compositions for coating the surfaces of moulds, cores, or patterns**

#### Definition statement

*This subclass/group covers:*

Any kind of composition for coating moulds , cores or patterns

#### Informative references

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

Devices for coating moulds or cores	<a href="#">B22C 23/02</a>
Linings for centrifugal moulds	<a href="#">B22D 13/104</a>
Lubricating injection die casting moulds	<a href="#">B22D 17/2007</a>

### B22C 5/00

**Machines or devices specially designed for dressing or handling the mould material so far as specially adapted for that purpose (of general applicability, see the relevant places, e.g. for material with water-setting properties B28C)**

## Definition statement

*This subclass/group covers:*

These groups cover:

The preparation of moulding material; Reclaiming used moulding material;  
Machines or devices therefor , e.g. mixers, kneaders, grinders, stirrers,  
coolers, dryers

Plants showing a combination of these machines;

## Informative references

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

Producing mixtures containing clay	<a href="#">B28C</a>
Mixing in general	<a href="#">B01F</a>
Crushing, pulverising	<a href="#">B02C</a>
Machine tools	B23

## B22C 7/00

### Patterns; Manufacture thereof so far as not provided for in other classes

## Definition statement

*This subclass/group covers:*

These groups cover:

Patterns, pattern plates and the assembling thereof; Core boxes and accessories., e.g. sealing means, venting means, ejector elements

## References relevant to classification in this group

*This subclass/group does not cover:*

These groups do not cover:

Moulding of an expanded plastic material	<a href="#">B29C 67/22</a>
Moulding wax	<a href="#">B29C 67/241</a>

## Informative references

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

Joining of plastics	<a href="#">B29C 65/00</a> - <a href="#">B29C 65/82</a>
Venting means for moulds	<a href="#">B22C 9/067</a>
Vented cores	<a href="#">B22C 9/106</a>
Venting means for injection dies	<a href="#">B22D 17/145</a>
Moulds (for plastics) with venting means	<a href="#">B29C 45/34</a>
Cores (for plastic moulding) with venting means	<a href="#">B29C 33/10</a>
Ejecting castings from injection casting dies	<a href="#">B22D 17/2236</a>

## B22C 9/00

**Moulds or cores (uniquely adapted to particular casting processes B22D); Moulding processes (processes involving the use of particular moulding machines, see the relevant groups for these machines)**

### Definition statement

*This subclass/group covers:*

These groups cover:

Moulds or cores; moulding processes, not involving the use of a particular moulding machine;

[B22C 9/12](#) covers treatment of the green sand moulds or cores

[B22C 9/18](#) covers the after treatment of moulds or cores before casting, like making venting channels, or deburring cores

### References relevant to classification in this group

*This subclass/group does not cover:*

These groups does not cover:

Moulds for ingots	<a href="#">B22D 7/06</a>
Dies for injection die casting	<a href="#">B22D 17/22</a>
Locking, opening or closing dies	<a href="#">B22D 17/26</a>
Locating and holding cores or inserts in die casting	<a href="#">B22D 17/24</a>
Venting means for injection dies	<a href="#">B22D 17/145</a>
Venting means for core boxes	<a href="#">B22C 7/065</a>
Selection of die materials	<a href="#">B22D 17/2209</a>
Cooling or heating injection dies	<a href="#">B22D 17/2218</a>

### Informative references

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

Casting chains	<a href="#">B22D 25/023</a>
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### Special rules of classification within this group

[B22C 9/04](#) : machines for investing a lost pattern are classified in [B22C 13/085](#)

## B22C 11/00

**Moulding machines characterised by the relative arrangement of the parts of same**

### Definition statement

*This subclass/group covers:*

These groups cover:

moulding machines wherein the moulds are moved through different stations for successive operations; - moulding machines which produce flaskless moulds; - travelling moulding machines

## Informative references

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

Transporting flaskless moulds	<a href="#">B22D 33/005</a>
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## B22C 13/00

### Moulding machines for making moulds or cores of particular shapes

#### Definition statement

*This subclass/group covers:*

These groups cover:

Machines, accessory devices and tools : for machining a mould or core from a block of moulding material; -for extruding moulding material through a die and for making shell moulds or shell cores

#### Special rules of classification within this group

[B22C 13/08](#) : If a specific compacting mechanism is used, then a class is also given in one of the relevant groups ([B22C 15/00](#) - [B22C 15/34](#))

## B22C 15/00

### Moulding machines characterised by the compacting mechanism; Accessories therefor

#### Definition statement

*This subclass/group covers:*

These groups cover:

moulding machines characterised by the mechanism used for compacting the moulding material inside the flask; accessories therefor;

## B22C 17/00

### Moulding machines characterised by the mechanism for separating the pattern from the mould or for turning over the flask or the pattern plate

#### Definition statement

*This subclass/group covers:*

These groups cover:

[B22C 17/02](#) covers moulding machines where the mould is lifted off from the pattern by using a number of moving pins

[B22C 17/06](#) covers moulding machines wherein the pattern is retracted from the mould, through a stripping plate which prevents dislodging moulding material

[B22C 17/08](#) - [B22C 17/14](#) cover moulding machines wherein pattern plate and flask, eventually together with the compacting unit receive a rotating movement during demoulding

## **B22C 19/00**

### **Components or accessories for moulding machines**

#### **Definition statement**

*This subclass/group covers:*

These groups cover:

Any type of details for moulding machines, e.g. tables, controlling devices, loosening devices for the pattern, seals, lining plates.

## **B22C 21/00**

### **Flasks; Accessories therefor (stripping plates B22C17/06)**

#### **Definition statement**

*This subclass/group covers:*

These groups cover:

Any kind of flasks and details thereof like upset frames, boards, clamping and guiding equipment; Accessories like equipment for securing moulding material or cores inside the flasks

#### **References relevant to classification in this group**

*This subclass/group does not cover:*

These groups do not cover:

Stripping plates	<a href="#">B22C 17/06</a>
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## Informative references

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

Moulds formed by vacuum sealed moulding	<a href="#">B22C 9/03</a>
Holding cores or inserts in injection dies	<a href="#">B22D 17/24</a>

## B22C 23/00

### Tools; Devices not mentioned before for moulding

#### Definition statement

*This subclass/group covers:*

These groups cover:

Any kind of tool or device not mentioned before for moulding, e.g. devices for coating moulds or cores, tools for marking moulds, tools for measuring mould strength.

## Informative references

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

Lubricating injection die casting moulds	<a href="#">B22D 17/2007</a>
Selection of compositions for coating moulds	<a href="#">B22C 3/00</a>

## B22C 25/00

### Foundry moulding plants (for preparing mould materials B22C5/18; in combination with casting plants B22D47/02)

#### Definition statement

*This subclass/group covers:*

the lay-out of a moulding plant which may comprise a combination of machines for preparing the moulding material, core making machines, mould making machines and eventually transporting means between the machines

### **Special rules of classification within this group**

Plants for preparing moulding material are classified in [B22C 5/18](#)

Moulding plants in combination with a casting plant are classified in [B22D 47/02](#)