

B22C

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

Definition statement

This place covers:

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

References

Informative references

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

Shaping clay or other ceramic substances	B28B
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Special rules of classification

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 :

B22C3/02 covered by [B22C 3/00](#)

B22C5/13 covered by [B22C 5/12](#)

B22C7/05 covered by [B22C 7/04](#)

B22C9/11 covered by [B22C 9/10](#)

B22C9/14 covered by [B22C 9/12](#)

B22C9/16 covered by [B22C 9/12](#)

B22C15/264 - B22C15/276 covered by [B22C 15/23](#)

B22C19/01 covered by [B22C 19/00](#)

Glossary of terms

In this place, 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 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 [C04B 35/00](#)); Chemical or physical features in the formation or manufacture of moulds

Definition statement

This place covers:

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

References

Informative references

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

use of lost patterns	B22C 9/04
investing a lost pattern	B22C 13/085
Refractory materials in general	C04B 35/00
macromolecular compounds	C08G

Special rules of classification

[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 place covers:

Any kind of composition for coating moulds , cores or patterns

References

Informative references

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

Devices for coating moulds or cores	B22C 23/02
Linings for centrifugal moulds	B22D 13/104
Lubricating injection die casting moulds	B22D 17/2007

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 place covers:

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;

References

Informative references

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

Mixing in general	B01F
Crushing, pulverising	B02C
Machine tools	B23
Producing mixtures containing clay	B28C

B22C 7/00

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

Definition statement

This place covers:

These groups cover:

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

References

Limiting references

This place does not cover:

Moulding of an expanded plastic material	B29C 44/00
Moulding wax	B29C 67/241

Informative references

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

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

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 place covers:

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

Limiting references

This place does not cover:

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

Informative references

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

Casting chains	B22D 25/023
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Special rules of classification

[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 place covers:

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

References

Informative references

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

Transporting flaskless moulds	B22D 33/005
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B22C 13/00

Moulding machines for making moulds or cores of particular shapes

Definition statement

This place covers:

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

[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 place covers:

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 place covers:

[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 place covers:

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 [B22C 17/06](#))

Definition statement

This place covers:

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

Limiting references

This place does not cover:

Stripping plates	B22C 17/06
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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	B22C 9/03
Holding cores or inserts in injection dies	B22D 17/24

B22C 23/00

Tools; Devices not mentioned before for moulding

Definition statement

This place covers:

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.

References

Informative references

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

Selection of compositions for coating moulds	B22C 3/00
Lubricating injection die casting moulds	B22D 17/2007

B22C 25/00

Foundry moulding plants (for preparing mould materials [B22C 5/18](#); in combination with casting plants [B22D 47/02](#))

Definition statement

This place 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

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](#)