

B 28 B SHAPING CLAY OR OTHER CERAMIC COMPOSITIONS, SLAG OR MIXTURES CONTAINING CEMENTITIOUS MATERIAL, e.g. PLASTER (foundry moulding **B 22 C**; working stone or stone-like material **B 28 D**; shaping of substances in a plastic state, in general **B 29 C**; making layered products not composed wholly of these substances **B 32 B**; shaping in situ, see the relevant classes of section E)

Note

In this subclass, the following term is used with the meaning indicated:

- “the material” means:
 - (a) clay or other ceramic compositions;
 - (b) slag;
 - (c) mixtures with water-setting properties given by clay, cementitious material, or slag.

Subclass Index

PRODUCING ARTICLES

Shaping articles characterised by method of production, machines therefor.....1/00, 3/00, 5/00
Coating of surfaces.....19/00

APPARATUS OR PROCESSES FOR

TREATING OR WORKING ARTICLES 11/00
MOULDS; AUXILIARY EQUIPMENT 7/00; 13/00, 17/00
GENERAL LAYOUT OF PLANT 15/00
PRODUCTION OF TUBULAR OR REINFORCED ARTICLES 21/00, 23/00

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| <p>1/00 Producing shaped articles from the material (using presses 3/00; shaping on moving conveyers 5/00; producing tubular articles 21/00)</p> <p>1/02 . by turning or jiggering</p> <p>1/04 . by tamping or ramming (followed by pressing 3/02)</p> <p>1/08 . by vibrating or jolting</p> <p>1/087 . . by means acting on the mould [6]</p> <p>1/093 . . by means directly acting on the material, e.g. by cores wholly or partly immersed in the material (internal vibrators for compacting concrete <u>in situ</u> E 04 G 21/08) [6]</p> <p>1/10 . . and applying pressure otherwise than by the use of presses</p> <p>1/14 . by simple casting, the material being neither forcibly fed nor positively compacted (for molten material 1/54)</p> <p>1/16 . . for producing layered articles (coating 11/04)</p> <p>1/20 . by centrifugal or rotational casting (slip-casting involving rotation of the mould 1/28; for molten material 1/54)</p> <p>1/24 . by injection moulding</p> <p>1/26 . by slip-casting, i.e. by casting a suspension or dispersion of the material in a liquid-absorbent or porous mould, the liquid being allowed to soak into or pass through the walls of the mould; Moulds therefor (1/52 takes precedence)</p> <p>1/28 . . involving rotation of the mould</p> <p>1/29 . by profiling or strickling the material in open moulds or on moulding surfaces</p> <p>1/30 . by applying the material on to a core, or other moulding surface to form a layer thereon (to form a permanent layer 19/00)</p> <p>1/32 . . by projecting, e.g. spraying (spraying in general B 05 B, D)</p> <p>1/34 . . . by centrifugal force</p> <p>1/38 . . by dipping (in general B 05 C, D)</p> <p>1/40 . . by wrapping, e.g. winding</p> <p>1/42 . . . using mixtures containing fibres, e.g. for making sheets by slitting the wound layer</p> <p>1/44 . by forcing cores into filled moulds for forming hollow articles</p> <p>1/48 . by removing material from solid section preforms for forming hollow articles, e.g. by punching or boring</p> | <p>1/50 . specially adapted for producing articles of expanded material, e.g. cellular concrete (chemical aspects C 04 B)</p> <p>1/52 . specially adapted for producing articles from mixtures containing fibres (by wrapping on to mandrels 1/42)</p> <p>1/54 . specially adapted for producing articles from molten material, e.g. slag (chemical aspects C 04 B)</p> <p>3/00 Producing shaped articles from the material by using presses (shaping on moving conveyers 5/00); Presses specially adapted therefor (presses in general B 30 B)</p> <p>3/02 . wherein a ram exerts pressure on the material in a moulding space; Ram heads of special form</p> <p>3/04 . . with one ram per mould (3/10 takes precedence)</p> <p>3/06 . . . with two or more ram and mould sets</p> <p>3/08 . . with two or more rams per mould</p> <p>3/10 . . each charge of material being compressed against previously formed body</p> <p>3/12 . wherein one or more rollers exert pressure on the material</p> <p>3/14 . . with co-operating pocketed rollers</p> <p>3/16 . . with co-operating profiled rollers</p> <p>3/18 . . Roller-and-ring machines, i.e. with roller disposed within a ring and co-operating with the inner surface of the ring</p> <p>3/20 . wherein the material is extruded</p> <p>3/22 . . by screw or worm</p> <p>3/24 . . by reciprocating plunger</p> <p>3/26 . . Extrusion dies</p> <p>5/00 Producing shaped articles from the material in moulds or on moulding surfaces, carried or formed by, in, or on conveyers irrespective of the manner of shaping (shaping aspects, <u>see</u> the relevant groups)</p> <p>5/02 . on conveyers of the endless-belt or chain type (in combination with pressing rollers 3/12)</p> <p>5/04 . in moulds moved in succession past one or more shaping stations (on turntables 5/06)</p> <p>5/06 . in moulds on a turntable</p> <p>5/08 . . intermittently rotated</p> |
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5/10 . in moulds carried on the circumference of a rotating drum

5/12 . . intermittently rotated

7/00 Moulds; Cores; Mandrels (specially adapted for the production of tubular articles [21/00](#))

7/02 . Moulds with adjustable parts

7/04 . . one or more of the parts being pivotally mounted

7/06 . Moulds with flexible parts

7/08 . Moulds provided with means for tilting or inverting

7/10 . Moulds with means incorporated therein, or carried thereby, for ejecting the moulded article (devices, not forming part of the mould, for ejecting the moulded article [13/06](#))

7/12 . . by fluid pressure

7/14 . Moulds with means incorporated therein, or carried thereby, for cutting the moulded article into parts (cutting means independent of the mould [11/14](#))

7/16 . Moulds for making shaped articles with cavities or holes open to the surface

7/18 . . the holes passing completely through the article

7/20 . Moulds for making shaped articles with undercut recesses, e.g. dovetails

7/22 . Moulds for making units for prefabricated buildings; Moulds for making prefabricated stair units

7/24 . Unitary mould structures with a plurality of moulding spaces

7/26 . Assemblies of separate moulds

7/28 . Cores; Mandrels

7/30 . . adjustable, collapsible, or expanding

7/32 . . . inflatable (connection of valves to inflatable elastic bodies [B 60 C 29/00](#))

7/34 . Moulds, cores, or mandrels of special material, e.g. destructible materials (for slip-casting [1/26](#))

7/36 . Linings or coatings (lubricating surfaces of moulds, cores, or mandrels [7/38](#))

7/38 . Treating surfaces of moulds, cores, or mandrels to prevent sticking

7/40 . characterised by means for modifying the properties of the moulding material [5]

7/42 . . for heating or cooling, e.g. steam jackets [5]

7/44 . . for treating with gases or degassing, e.g. for de-aerating [5]

7/46 . . for humidifying or dehumidifying [5]

11/00 Apparatus or processes for treating or working the shaped articles (specially adapted for tubular articles [21/92](#); decoration or surface treatment in general [B 05](#), [B 44](#); compacting concrete *in situ* in connection with building [E 04 G 21/06](#); drying [F 26](#))

11/02 . for attaching appendages, e.g. handles, spouts

11/04 . for coating (glazing, engobing [C 04 B](#))

11/06 . . with powdered or granular material

11/08 . for reshaping the surface, e.g. smoothing, roughening, corrugating, making screw-threads

11/10 . . by using presses

11/12 . for removing parts of the articles by cutting

11/14 . for dividing shaped articles by cutting

11/16 . . for extrusion

11/18 . for removing burr

11/22 . for cleaning

11/24 . for curing, setting or hardening (processes for influencing or modifying the setting or hardening ability of mortars, concrete or artificial stone compositions, in general [C 04 B 40/00](#)) [6]

13/00 Feeding the unshaped material to moulds or apparatus for producing shaped articles;

Discharging shaped articles from such moulds or apparatus (feeding or discharging devices incorporated in, or operatively associated with, a particular type of shaping apparatus, or specially designed to supply materials to a particular type of shaping apparatus, see the relevant groups for the apparatus)

13/02 . Feeding the unshaped material to moulds or apparatus for producing shaped articles

13/04 . Discharging the shaped articles (conveying systems for ceramic mouldings [B 65 G 49/08](#))

13/06 . . Removing the shaped articles from moulds (by means incorporated in, or carried by, the moulds [7/10](#))

15/00 General arrangement or layout of plant

17/00 Details of, or accessories for, apparatus for shaping the material; Auxiliary measures taken in connection with such shaping (moulds [7/00](#); after-treatment [11/00](#); feeding or discharging [13/00](#); arrangements for embedding elements in the material [23/00](#); details, accessories, or auxiliary measures special to any one type of shaping, machine or method of shaping, see the relevant groups for such machines or methods)

17/02 . Conditioning the material prior to shaping

17/04 . Exhausting or laying dust

19/00 Machines or methods for applying the material to surfaces to form a permanent layer thereon (making shaped articles on mandrels [1/30](#); applying liquids or other fluent materials to surfaces in general [B 05 C](#); glazing or engobing [C 04 B](#); applying the material to walls or other fixed structures, see the relevant classes of section E)

Methods, apparatus, or machines, specially adapted for the production of tubular or reinforced articles

21/00 Methods or machines specially adapted for the production of tubular articles

21/02 . by casting into moulds

21/04 . . by simple casting, the material being neither positively compacted nor forcibly fed

21/06 . . into moulds having sliding parts ([21/26](#) takes precedence; forms, shutterings, or falsework for making rooms as a whole, whole stories, or whole buildings *in situ* [E 04 G 11/02](#))

21/08 . . by slip-casting; Moulds therefor

21/10 . . using compacting means

21/12 . . . tamping or ramming the material or the mould elements

21/14 . . . vibrating, e.g. the surface of the material

21/16 one or more mould elements

21/18 . . . using expansible or retractable mould or core elements

21/20 using inflatable cores, e.g. having a frame inside the inflatable part of the core (connection of valves to inflatable elastic bodies [B 60 C 29/00](#)) [2]

21/22 . . . using rotatable mould or core parts

21/24 using compacting heads, rollers, or the like

21/26 with a packer head serving as a sliding mould or provided with guiding means for feeding the material

21/28 combined with vibration means

21/30 Centrifugal moulding

- 21/32 Feeding the material into the moulds
- 21/34 combined with vibrating or other additional compacting means
- 21/36 applying fluid pressure or vacuum to the material (combined with slip-casting 21/08)
- 21/38 introducing the material wholly or partly under pressure
- 21/40 by evacuating one or more of the mould parts
- 21/42 by shaping on or against mandrels or like moulding surfaces
- 21/44 by projecting, e.g. spraying
- 21/46 by dipping
- 21/48 by wrapping, e.g. winding
- 21/50 Details of compression or compacting means
- 21/52 by extruding
- 21/54 Mouthpieces for shaping sockets, bends, or like peculiarly-shaped tubular articles
- 21/56 incorporating reinforcements
- 21/58 Steel tubes
- 21/60 prestressed reinforcements
- 21/62 circumferential
- 21/64 Winding arrangements
- 21/66 Reinforcing mats
- 21/68 and applying centrifugal forces
- 21/70 by building-up from preformed elements
- 21/72 Producing multilayer tubes
- 21/74 Producing pipe bends, sockets, sleeves; Moulds therefor (combined with extrusion presses 21/54)
- 21/76 Moulds
- 21/78 with heating or cooling means, e.g. steam jackets
- 21/80 adapted to centrifugal or rotational moulding
- 21/82 built-up from several parts; Multiple moulds; Moulds with adjustable parts
- 21/84 Moulds with one or more pivotable parts
- 21/86 Cores (in general 7/00)
- 21/88 adjustable, collapsible or expandable (using inflatable cores 21/20)
- 21/90 Methods or apparatus for discharging after shaping
- 21/92 Methods or apparatus for treating or reshaping
- 21/94 for impregnating or coating by applying liquids or semi-liquids
- 21/96 for smoothing, roughening, corrugating or for removing burr
- 21/98 for reshaping, e.g. by means of reshape moulds
- 23/00 Arrangements specially adapted for the production of shaped articles with elements wholly or partly embedded in the moulding material (21/00 takes precedence; in units for prefabricated buildings 7/22)**
- 23/02 wherein the elements are reinforcing members
- 23/04 the elements being stressed
- 23/06 for the production of elongated articles
- 23/08 the articles being of tubular form
- 23/10 the shaping being effected by centrifugal or rotational moulding [2]
- 23/12 to form prestressed circumferential reinforcements [2]
- 23/14 by wrapping, e.g. winding apparatus [2]
- 23/16 Prestressed reinforcing nets [2]
- 23/18 for the production of elongated articles (23/06 takes precedence) [2]
- 23/20 the shaping being effected by centrifugal or rotational moulding (23/10 takes precedence) [2]
- 23/22 assembled from preformed parts [2]