Symbol	Typ	Titel
B	**Sektion**	**SECTION B — PERFORMING OPERATIONS; TRANSPORTING**
B28	**Klasse**	**WORKING CEMENT, CLAY, OR STONE**
B28B	**Unterklasse**	**SHAPING CLAY OR OTHER CERAMIC COMPOSITIONS, SLAG OR MIXTURES CONTAINING CEMENTITIOUS MATERIAL, e.g. PLASTER (foundry moulding B22C; working stone or stone-like material B28D; shaping of substances in a plastic state, in general B29C; making layered products not composed wholly of these substances B32B; shaping in situ, see the relevant classes of section E)**
B28B 1/00	**Hauptgruppe**	**Producing shaped articles from the material (using presses B28B 3/00; shaping on moving conveyers B28B 5/00; producing tubular articles B28B 21/00)**
B28B 1/02	1-Punkt Untergruppe	. by turning or jiggering
B28B 1/04	1-Punkt Untergruppe	. by tamping or ramming (followed by pressing B28B 3/02)
B28B 1/08	1-Punkt Untergruppe	. by vibrating or jolting
B28B 1/087	2-Punkt Untergruppe	. . by means acting on the mould [6]
B28B 1/093	2-Punkt Untergruppe	. . by means directly acting on the material, e.g. by cores wholly or partly immersed in the material (internal vibrators for compacting concrete in situE04G 21/08) [6]
B28B 1/10	2-Punkt Untergruppe	. . and applying pressure otherwise than by the use of presses
B28B 1/14	1-Punkt Untergruppe	. by simple casting, the material being neither forcibly fed nor positively compacted (for molten material B28B 1/54)
B28B 1/16	2-Punkt Untergruppe	. . for producing layered articles (coating B28B 11/04)
B28B 1/20	1-Punkt Untergruppe	. by centrifugal or rotational casting (slip-casting involving rotation of the mould B28B 1/28; for molten material B28B 1/54)
B28B 1/24	1-Punkt Untergruppe	. by injection moulding
B28B 1/26	1-Punkt Untergruppe	. 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 (B28B 1/52 takes precedence)
B28B 1/28	2-Punkt Untergruppe	. . involving rotation of the mould
B28B 1/29	1-Punkt Untergruppe	. by profiling or strickling the material in open moulds or on moulding surfaces
B28B 1/30	1-Punkt Untergruppe	. by applying the material on to a core, or other moulding surface to form a layer thereon (to form a permanent layer B28B 19/00)
B28B 1/32	2-Punkt Untergruppe	. . by projecting, e.g. spraying (spraying in general B05B, B05D)
B28B 1/34	3-Punkt Untergruppe	. . . by centrifugal force
B28B 1/38	2-Punkt Untergruppe	. . by dipping (in general B05C, B05D)
B28B 1/40	2-Punkt Untergruppe	. . by wrapping, e.g. winding
B28B 1/42	3-Punkt Untergruppe	. . . using mixtures containing fibres, e.g. for making sheets by slitting the wound layer
B28B 1/44	1-Punkt Untergruppe	. by forcing cores into filled moulds for forming hollow articles
B28B 1/48	1-Punkt Untergruppe	. by removing material from solid section preforms for forming hollow articles, e.g. by punching or boring
B28B 1/50	1-Punkt Untergruppe	. specially adapted for producing articles of expanded material, e.g. cellular concrete (chemical aspects C04B)

Symbol	Typ	Titel
B28B 1/52	1-Punkt Untergruppe	. specially adapted for producing articles from mixtures containing fibres (by wrapping on to mandrels B28B 1/42)
B28B 1/54	1-Punkt Untergruppe	. specially adapted for producing articles from molten material, e.g. slag (chemical aspects C04B)
B28B 3/00	**Hauptgruppe**	**Producing shaped articles from the material by using presses (shaping on moving conveyers B28B 5/00); Presses specially adapted therefor (presses in general B30B)**
B28B 3/02	1-Punkt Untergruppe	. wherein a ram exerts pressure on the material in a moulding space; Ram heads of special form
B28B 3/04	2-Punkt Untergruppe	. . with one ram per mould (B28B 3/10 takes precedence)
B28B 3/06	3-Punkt Untergruppe	. . . with two or more ram and mould sets
B28B 3/08	2-Punkt Untergruppe	. . with two or more rams per mould
B28B 3/10	2-Punkt Untergruppe	. . each charge of material being compressed against previously formed body
B28B 3/12	1-Punkt Untergruppe	. wherein one or more rollers exert pressure on the material
B28B 3/14	2-Punkt Untergruppe	. . with co-operating pocketed rollers
B28B 3/16	2-Punkt Untergruppe	. . with co-operating profiled rollers
B28B 3/18	2-Punkt Untergruppe	. . Roller-and-ring machines, i.e. with roller disposed within a ring and co-operating with the inner surface of the ring
B28B 3/20	1-Punkt Untergruppe	. wherein the material is extruded
B28B 3/22	2-Punkt Untergruppe	. . by screw or worm
B28B 3/24	2-Punkt Untergruppe	. . by reciprocating plunger
B28B 3/26	2-Punkt Untergruppe	. . Extrusion dies
B28B 5/00	**Hauptgruppe**	**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, see the relevant groups)**
B28B 5/02	1-Punkt Untergruppe	. on conveyers of the endless-belt or chain type (in combination with pressing rollers B28B 3/12)
B28B 5/04	1-Punkt Untergruppe	. in moulds moved in succession past one or more shaping stations (on turntables B28B 5/06)
B28B 5/06	1-Punkt Untergruppe	. in moulds on a turntable
B28B 5/08	2-Punkt Untergruppe	. . intermittently rotated
B28B 5/10	1-Punkt Untergruppe	. in moulds carried on the circumference of a rotating drum
B28B 5/12	2-Punkt Untergruppe	. . intermittently rotated
B28B 7/00	**Hauptgruppe**	**Moulds; Cores; Mandrels (specially adapted for the production of tubular articles B28B 21/00)**
B28B 7/02	1-Punkt Untergruppe	. Moulds with adjustable parts
B28B 7/04	2-Punkt Untergruppe	. . one or more of the parts being pivotally mounted
B28B 7/06	1-Punkt Untergruppe	. Moulds with flexible parts
B28B 7/08	1-Punkt Untergruppe	. Moulds provided with means for tilting or inverting
B28B 7/10	1-Punkt Untergruppe	. 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 B28B 13/06)
B28B 7/12	2-Punkt Untergruppe	. . by fluid pressure

Symbol	Typ	Titel
B28B 7/14	1-Punkt Untergruppe	. Moulds with means incorporated therein, or carried thereby, for cutting the moulded article into parts (cutting means independent of the mould B28B 11/14)
B28B 7/16	1-Punkt Untergruppe	. Moulds for making shaped articles with cavities or holes open to the surface
B28B 7/18	2-Punkt Untergruppe	. . the holes passing completely through the article
B28B 7/20	1-Punkt Untergruppe	. Moulds for making shaped articles with undercut recesses, e.g. dovetails
B28B 7/22	1-Punkt Untergruppe	. Moulds for making units for prefabricated buildings; Moulds for making prefabricated stair units
B28B 7/24	1-Punkt Untergruppe	. Unitary mould structures with a plurality of moulding spaces
B28B 7/26	1-Punkt Untergruppe	. Assemblies of separate moulds
B28B 7/28	1-Punkt Untergruppe	. Cores; Mandrels
B28B 7/30	2-Punkt Untergruppe	. . adjustable, collapsible, or expanding
B28B 7/32	3-Punkt Untergruppe	. . . inflatable (connection of valves to inflatable elastic bodies B60C 29/00)
B28B 7/34	1-Punkt Untergruppe	. Moulds, cores, or mandrels of special material, e.g. destructible materials (for slip-casting B28B 1/26)
B28B 7/36	1-Punkt Untergruppe	. Linings or coatings (lubricating surfaces of moulds, cores, or mandrels B28B 7/38)
B28B 7/38	1-Punkt Untergruppe	. Treating surfaces of moulds, cores, or mandrels to prevent sticking
B28B 7/40	1-Punkt Untergruppe	. characterised by means for modifying the properties of the moulding material [5]
B28B 7/42	2-Punkt Untergruppe	. . for heating or cooling, e.g. steam jackets [5]
B28B 7/44	2-Punkt Untergruppe	. . for treating with gases or degassing, e.g. for de-aerating [5]
B28B 7/46	2-Punkt Untergruppe	. . for humidifying or dehumidifying [5]
B28B 11/00	**Hauptgruppe**	**Apparatus or processes for treating or working the shaped articles (specially adapted for tubular articles B28B 21/92; decoration or surface treatment in general B05, B44; compacting concrete <u>in situ</u> in connection with building E04G 21/06; drying F26)**
B28B 11/02	1-Punkt Untergruppe	. for attaching appendages, e.g. handles, spouts
B28B 11/04	1-Punkt Untergruppe	. for coating (glazing, engobing C04B)
B28B 11/06	2-Punkt Untergruppe	. . with powdered or granular material
B28B 11/08	1-Punkt Untergruppe	. for reshaping the surface, e.g. smoothing, roughening, corrugating, making screw-threads
B28B 11/10	2-Punkt Untergruppe	. . by using presses
B28B 11/12	1-Punkt Untergruppe	. for removing parts of the articles by cutting
B28B 11/14	1-Punkt Untergruppe	. for dividing shaped articles by cutting
B28B 11/16	2-Punkt Untergruppe	. . for extrusion
B28B 11/18	1-Punkt Untergruppe	. for removing burr
B28B 11/22	1-Punkt Untergruppe	. for cleaning
B28B 11/24	1-Punkt Untergruppe	. for curing, setting or hardening (processes for influencing or modifying the setting or hardening ability of mortars, concrete or artificial stone compositions, in general C04B 40/00) [6]
B28B 13/00	**Hauptgruppe**	**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**

Symbol	Typ	Titel
		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)
B28B 13/02	1-Punkt Untergruppe	. Feeding the unshaped material to moulds or apparatus for producing shaped articles
B28B 13/04	1-Punkt Untergruppe	. Discharging the shaped articles (conveying systems for ceramic mouldings B65G 49/08)
B28B 13/06	2-Punkt Untergruppe	. . Removing the shaped articles from moulds (by means incorporated in, or carried by, the moulds B28B 7/10)
B28B 15/00	**Hauptgruppe**	**General arrangement or layout of plant**
B28B 17/00	**Hauptgruppe**	**Details of, or accessories for, apparatus for shaping the material; Auxiliary measures taken in connection with such shaping (moulds B28B 7/00; after-treatment B28B 11/00; feeding or discharging B28B 13/00; arrangements for embedding elements in the material B28B 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)**
B28B 17/02	1-Punkt Untergruppe	. Conditioning the material prior to shaping
B28B 17/04	1-Punkt Untergruppe	. Exhausting or laying dust
B28B 19/00	**Hauptgruppe**	**Machines or methods for applying the material to surfaces to form a permanent layer thereon (making shaped articles on mandrels B28B 1/30; applying liquids or other fluent materials to surfaces in general B05C; glazing or engobing C04B; 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
B28B 21/00	**Hauptgruppe**	**Methods or machines specially adapted for the production of tubular articles**
B28B 21/02	1-Punkt Untergruppe	. by casting into moulds
B28B 21/04	2-Punkt Untergruppe	. . by simple casting, the material being neither positively compacted nor forcibly fed
B28B 21/06	2-Punkt Untergruppe	. . into moulds having sliding parts (B28B 21/26 takes precedence; forms, shutterings, or falsework for making rooms as a whole, whole stories, or whole buildings in situE04G 11/02)
B28B 21/08	2-Punkt Untergruppe	. . by slip-casting; Moulds therefor
B28B 21/10	2-Punkt Untergruppe	. . using compacting means
B28B 21/12	3-Punkt Untergruppe	. . . tamping or ramming the material or the mould elements
B28B 21/14	3-Punkt Untergruppe	. . . vibrating, e.g. the surface of the material
B28B 21/16	4-Punkt Untergruppe	. . . . one or more mould elements
B28B 21/18	3-Punkt Untergruppe	. . . using expansible or retractable mould or core elements
B28B 21/20	4-Punkt Untergruppe	. . . . using inflatable cores, e.g. having a frame inside the inflatable part of the core (connection of valves to inflatable elastic bodies B60C 29/00) [2]
B28B 21/22	3-Punkt Untergruppe	. . . using rotatable mould or core parts
B28B 21/24	4-Punkt Untergruppe	. . . . using compacting heads, rollers, or the like
B28B 21/26	5-Punkt Untergruppe	. . . . . with a packer head serving as a sliding mould or provided with guiding means for feeding the material
B28B 21/28	5-Punkt Untergruppe	. . . . . combined with vibration means
B28B 21/30	4-Punkt Untergruppe	. . . . Centrifugal moulding

Symbol	Typ	Titel
B28B 21/32	5-Punkt Untergruppe	. . . . . Feeding the material into the moulds
B28B 21/34	5-Punkt Untergruppe	. . . . . combined with vibrating or other additional compacting means
B28B 21/36	3-Punkt Untergruppe	. . . applying fluid pressure or vacuum to the material (combined with slip-casting B28B 21/08)
B28B 21/38	4-Punkt Untergruppe	. . . . introducing the material wholly or partly under pressure
B28B 21/40	4-Punkt Untergruppe	. . . . by evacuating one or more of the mould parts
B28B 21/42	1-Punkt Untergruppe	. by shaping on or against mandrels or like moulding surfaces
B28B 21/44	2-Punkt Untergruppe	. . by projecting, e.g. spraying
B28B 21/46	2-Punkt Untergruppe	. . by dipping
B28B 21/48	2-Punkt Untergruppe	. . by wrapping, e.g. winding
B28B 21/50	2-Punkt Untergruppe	. . Details of compression or compacting means
B28B 21/52	1-Punkt Untergruppe	. by extruding
B28B 21/54	2-Punkt Untergruppe	. . Mouthpieces for shaping sockets, bends, or like peculiarly-shaped tubular articles
B28B 21/56	1-Punkt Untergruppe	. incorporating reinforcements
B28B 21/58	2-Punkt Untergruppe	. . Steel tubes
B28B 21/60	2-Punkt Untergruppe	. . prestressed reinforcements
B28B 21/62	3-Punkt Untergruppe	. . . circumferential
B28B 21/64	4-Punkt Untergruppe	. . . . Winding arrangements
B28B 21/66	3-Punkt Untergruppe	. . . Reinforcing mats
B28B 21/68	2-Punkt Untergruppe	. . and applying centrifugal forces
B28B 21/70	1-Punkt Untergruppe	. by building-up from preformed elements
B28B 21/72	2-Punkt Untergruppe	. . Producing multilayer tubes
B28B 21/74	2-Punkt Untergruppe	. . Producing pipe bends, sockets, sleeves; Moulds therefor (combined with extrusion presses B28B 21/54)
B28B 21/76	1-Punkt Untergruppe	. Moulds
B28B 21/78	2-Punkt Untergruppe	. . with heating or cooling means, e.g. steam jackets
B28B 21/80	2-Punkt Untergruppe	. . adapted to centrifugal or rotational moulding
B28B 21/82	2-Punkt Untergruppe	. . built-up from several parts; Multiple moulds; Moulds with adjustable parts
B28B 21/84	3-Punkt Untergruppe	. . . Moulds with one or more pivotable parts
B28B 21/86	1-Punkt Untergruppe	. Cores (in general B28B 7/00)
B28B 21/88	2-Punkt Untergruppe	. . adjustable, collapsible or expansible (using inflatable cores B28B 21/20)
B28B 21/90	1-Punkt Untergruppe	. Methods or apparatus for discharging after shaping
B28B 21/92	1-Punkt Untergruppe	. Methods or apparatus for treating or reshaping
B28B 21/94	2-Punkt Untergruppe	. . for impregnating or coating by applying liquids or semi-liquids

Symbol	Typ	Titel
B28B 21/96	2-Punkt Untergruppe	. . for smoothing, roughening, corrugating or for removing burr
B28B 21/98	2-Punkt Untergruppe	. . for reshaping, e.g. by means of reshape moulds
B28B 23/00	**Hauptgruppe**	**Arrangements specially adapted for the production of shaped articles with elements wholly or partly embedded in the moulding material (B28B 21/00 takes precedence; in units for prefabricated buildings B28B 7/22)**
B28B 23/02	1-Punkt Untergruppe	. wherein the elements are reinforcing members
B28B 23/04	2-Punkt Untergruppe	. . the elements being stressed
B28B 23/06	3-Punkt Untergruppe	. . . for the production of elongated articles
B28B 23/08	4-Punkt Untergruppe	. . . . the articles being of tubular form
B28B 23/10	3-Punkt Untergruppe	. . . the shaping being effected by centrifugal or rotational moulding [2]
B28B 23/12	3-Punkt Untergruppe	. . . to form prestressed circumferential reinforcements [2]
B28B 23/14	4-Punkt Untergruppe	. . . . by wrapping, e.g. winding apparatus [2]
B28B 23/16	4-Punkt Untergruppe	. . . . Prestressed reinforcing nets [2]
B28B 23/18	2-Punkt Untergruppe	. . for the production of elongated articles (B28B 23/06 takes precedence) [2]
B28B 23/20	2-Punkt Untergruppe	. . the shaping being effected by centrifugal or rotational moulding (B28B 23/10 takes precedence) [2]
B28B 23/22	2-Punkt Untergruppe	. . assembled from preformed parts [2]