

# CPC COOPERATIVE PATENT CLASSIFICATION

## B29D PRODUCING PARTICULAR ARTICLES FROM PLASTICS OR FROM SUBSTANCES IN A PLASTIC STATE ([making granules B29B 9/00](#); [making preforms B29B 11/00](#))

<b>1/00</b>	<b>Producing articles with screw-threads</b>	11/00182	. . . . . {using carrier plates}
1/005	. {fibre reinforced}	11/00192	. . . . . {Demoulding, e.g. separating lenses from mould halves}
<b>5/00</b>	<b>Producing elements of slide fasteners; Combined making and attaching of elements of slide fasteners</b>	11/00201	. . . . . {using cooling means}
5/02	. the fasteners having separate interlocking members	11/00211	. . . . . {using heating means}
5/04	. the interlocking members being formed by continuous meander of filamentary material	11/00221	. . . . . {using prying means}
5/06	. the interlocking members being formed by continuous helix	11/0023	. . . . . {Transferring contact lenses}
5/08	. the interlocking members being formed by profiled or castellated edge of a stringer	11/0024	. . . . . {using a vacuum suction gripper}
5/10	. the interlocking members being formed by continuous profiled strip	11/0025	. . . . . {Removing impurities from contact lenses, e.g. leaching}
<b>7/00</b>	<b>Producing flat articles, e.g. films or sheets</b> ( <a href="#">B29D 24/00 takes precedence</a> )	11/00259	. . . {Plants for the production of contact lenses}
7/01	. Films or sheets	11/00269	. . {Fresnel lenses}
<b>2009/00</b>	<b>IPC7 Producing layered products</b>	11/00278	. . {Lenticular sheets ( <a href="#">B29D 11/00269 takes precedence</a> )}
<b>11/00</b>	<b>Producing optical elements, e.g. lenses or prisms</b> ( <a href="#">grinding or polishing of optical elements B24B</a> ; <a href="#">constructional form of optical elements G02B</a> ; <a href="#">{optical parts of spectacles G02C 7/00}</a> )	11/00288	. . . {made by a rotating cylinder}
11/00009	. {Production of simple or compound lenses}	11/00298	. . . {Producing lens arrays}
11/00019	. . {with non-spherical faces, e.g. toric faces}	11/00307	. . . {Producing lens wafers}
11/00028	. . {Bifocal lenses; Multifocal lenses}	11/00317	. . . {Production of lenses with markings or patterns}
11/00038	. . {Production of contact lenses}	11/00326	. . . {having particular surface properties, e.g. a micro pattern}
11/00048	. . . {composed of parts with dissimilar composition ( <a href="#">B29D 11/00057 takes precedence</a> )}	11/00336	. . . . {by making depressions in the lens surfaces}
11/00057	. . . {characterised by the shape or surface condition of the edge, e.g. flashless, burrless, smooth}	11/00346	. . . {having nano size structures or features, e.g. fillers}
11/00067	. . . {Hydrating contact lenses}	11/00355	. . . {with a refractive index gradient}
11/00076	. . . {enabling passage of fluids, e.g. oxygen, tears, between the area under the lens and the lens exterior}	11/00365	. . . {Production of microlenses ( <a href="#">lenticular sheets B29D 11/00278</a> )}
11/00086	. . . {methods for matching the anterior surface of the contact lens to the shape of an eyeball}	11/00375	. . . {by moulding lenses in holes through a substrate}
11/00096	. . . {for delivering compositions, e.g. drugs to the eye}	11/00384	. . . {Local shaping by heating, e.g. local irradiation causing expansion}
11/00105	. . . {covering a large part of the cornea}	11/00394	. . . {Producing solid immersion lenses [SIL]}
11/00115	. . . {made by rotational casting}	11/00403	. . . {Producing compound lenses}
11/00125	. . . {Auxiliary operations, e.g. removing oxygen from the mould, conveying moulds from a storage to the production line in an inert atmosphere}	11/00413	. . . {made by moulding between two mould parts which are not in direct contact with one another, e.g. comprising a seal between or on the edges ( <a href="#">B29D 11/00019 - B29D 11/00355, B29D 11/00423, B29D 11/00432 take precedence</a> )}
11/00134	. . . . {Curing of the contact lens material}	11/00423	. . . {Plants for the production of simple or compound lenses ( <a href="#">B29D 11/00259 takes precedence</a> )}
11/00144	. . . . . {wherein the lens material is not fully polymerized, e.g. by leaving an unpolymerized volume}	11/00432	. . . {Auxiliary operations, e.g. machines for filling the moulds ( <a href="#">B29D 11/00125 takes precedence</a> )}
11/00153	. . . . . {Differential curing, e.g. by differential radiation}	11/00442	. . . {Curing the lens material}
11/00163	. . . . . {Movable masks or shutters, e.g. to vary the exposure}	11/00451	. . . {Changing a shape by remelting}
11/00173	. . . . . {Conveying moulds}	11/00461	. . . {Adjusting the refractive index, e.g. after implanting}
		11/00471	. . . {made by rotational casting ( <a href="#">B29D 11/00115 takes precedence</a> )}
		11/0048	. . . {Moulds for lenses ( <a href="#">moulds for plastic articles in general B29C 33/00</a> )}
		11/0049	. . . {Double sided moulds}
		11/005	. . . {having means for aligning the front and back moulds}
		11/00509	. . . . {to make toric lenses}
		11/00519	. . . {Reusable moulds}

- 11/00528 . . . {Consisting of two mould halves joined by an annular gasket}
- 11/00538 . . . {Feeding arrangements}
- 11/00548 . . . {with surfaces formed by films}
- 11/00557 . . . {with deformable mould walls, e.g. to make lenses with different shapes}
- 11/00567 . . . {wherein the mould forms part of the final package for lenses}
- 11/00576 . . . {with means to engage flash, e.g. HEMA ring}
- 11/00586 . . . . {and removing the flash or HEMA ring}
- 11/00596 . {Mirrors}
- 11/00605 . {Production of reflex reflectors}
- 11/00615 . . {moulded by partially embedding reflective elements, e.g. glass beads, into the surface of a support, e.g. to make prefabricated road markings (dispensing reflective beads on road markings [in situ E01C 23/163](#))}
- 11/00625 . . {Moulds for reflex reflectors (moulds for plastic articles in general [B29C 33/00](#))}
- 11/00634 . {Production of filters}
- 11/00644 . . {polarizing}
- 11/00653 . . {photochromic}
- 11/00663 . {Production of light guides}
- 11/00673 . . {Supports for light guides}
- 11/00682 . . {with a refractive index gradient}
- 11/00692 . . {combined with lenses}
- 11/00701 . . {having an intermediate layer between core and cladding}
- 11/00711 . . {by shrinking the sleeve or cladding onto the core}
- 11/00721 . . {involving preforms for the manufacture of light guides}
- 11/0073 . {Optical laminates}
- NOTE**  
Classification in this group must be supplemented, in so far as any product is concerned, by classification in [B32B](#)
- 11/0074 . {Production of other optical elements not provided for in [B29D 11/00009- B29D 11/0073](#)}
- 11/0075 . . {Connectors for light guides}
- 11/00759 . . {Branching elements for light guides}
- 11/00769 . . {Producing diffraction gratings}
- 11/00778 . . {Producing hyperlenses, superlenses or "perfect" lenses}
- 11/00788 . . {Producing optical films}
- 11/00798 . . {Producing diffusers}
- 11/00807 . . {Producing lenses combined with electronics, e.g. chips}
- 11/00817 . . . {Producing electro-active lenses or lenses with energy receptors, e.g. batteries or antennas}
- 11/00826 . . . . {with energy receptors for wireless energy transmission}
- 11/00836 . . {Producing non-circular, e.g. elliptic lenses}
- 11/00846 . . {Producing zero power lenses}
- 11/00855 . . {Producing cylindrical lenses}
- 11/00865 . {Applying coatings; tinting; colouring (printing, marking or copying processes [B41M](#); identification in general [G09F 3/00](#); producing decorative effects in general [B44C](#); positioning or marking of lenses [B24B 13/0055](#))}
- 11/00875 . . {on light guides}
- 11/00884 . . {Spin coating}
- 11/00894 . . {colouring or tinting}
- 11/00903 . . . {on the surface}
- 11/00913 . . . {full body; edge-to-edge}
- 11/00923 . . {on lens surfaces for colouring or tinting (printing or marking in general [B41M](#))}
- 11/00932 . {Combined cutting and grinding thereof}
- 11/00942 . . {where the lens material is mounted in a support for mounting onto a cutting device, e.g. a lathe, and where the support is of machinable material, e.g. plastics}
- 11/00951 . {Measuring, controlling or regulating}
- 11/00961 . . {using microprocessors or computers}
- 11/00971 . . . {using CNC machining to make mould surfaces}
- 11/0098 . . {Inspecting lenses}
- 11/0099 . . . {while still attached to the mould}
- 11/02 . Artificial eyes from organic plastic material {(implantable eye parts, artificial eyes [A61F 2/14](#))}
- 11/023 . . {Implants for natural eyes}
- 11/026 . . . {Comprising more than one lens}
- 12/00 Producing frames**
- 12/02 . Spectacle frames ([constructional form G02C](#))
- 15/00 Producing gear wheels or similar articles with grooves or projections, e.g. control knobs**
- 16/00 Producing articles with corrugations ([B29D 23/18](#) takes precedence)**
- 17/00 Producing carriers of records containing fine grooves or impressions, e.g. disc records for needle playback, cylinder records (recording sound or other information using formed grooves or the equivalent [G11B](#)); Producing record discs from master stencils**
- 17/002 . {Producing phonograph records}
- 17/005 . {Producing optically read record carriers, e.g. optical discs}
- 17/007 . . {Forming the relief pattern on a support larger than the record}
- 19/00 Producing buttons or semi-finished parts of buttons**
- 19/04 . by cutting, milling, turning, stamping, or perforating moulded parts; Surface treatment of buttons
- 19/06 . . Devices for feeding semi-finished parts to the processing machines
- 19/08 . . Making holes in buttons or in semi-finished parts thereof
- 21/00 Producing hair combs or similar toothed or slotted articles**
- 21/04 . by sawing, milling, cutting, or similar operations
- 21/06 . Polishing
- 22/00 Producing hollow articles (tubular articles [B29D 23/00](#); pneumatic tyres [B29D 30/00](#))**
- 22/003 . {Containers for packaging, storing or transporting, e.g. bottles, jars, cans, barrels, tanks}
- 22/006 . . {Hot water bottles}
- 22/02 . Inflatable articles
- 22/023 . . {Air springs; Air bellows (construction of fluid springs [F16F 9/00](#))}
- 22/026 . . {Ring shaped inner tubes with ends (endless inner tubes [B29D 23/24](#))}

- 22/04 . Spherical articles, e.g. balls ([B29D 22/02](#) takes precedence)
- 23/00 Producing tubular articles ([B29D 24/00](#) takes precedence)**
  - 23/001 . {Pipes; Pipe joints ([pleated hoses \[B29D 23/18\]\(#\)](#))}
  - 23/003 . . {Pipe joints, e.g. straight joints}
  - 23/005 . . . {provided with electrical wiring}
  - 23/006 . . . {Elbows}
  - 23/008 . . . {T-joints}
  - 23/14 . Cigar or cigarette holders
  - 23/18 . Pleated {or corrugated} hoses
  - 23/20 . Flexible squeeze tubes, e.g. for cosmetics
  - 23/24 . Endless tubes, e.g. inner tubes for pneumatic tyres {(producing ring shaped inner tubes with ends [B29D 22/026](#); inflatable inner tubes for tyres [B60C 5/00](#))}
- 24/00 Producing articles with hollow walls {([B29D 99/0028](#) takes precedence)}**
  - 24/001 . {formed of hollow ridges or ribs, e.g. separate ridges; continuous corrugated structure ([B29D 24/008](#) takes precedence)}
  - 24/002 . {formed with structures, e.g. cores placed between two plates or sheets, e.g. partially filled ([totally filled \[B29D 99/0021\]\(#\)](#))}
  - 24/004 . . {the structure having vertical or oblique ribs}
  - 24/005 . . {the structure having joined ribs, e.g. honeycomb}
  - 24/007 . . . {and a chamfered edge}
  - 24/008 . . {the structure having hollow ridges, ribs or cores}
- 25/00 Producing frameless domes**
- 28/00 Producing nets or the like, {e.g. meshes, lattices} (by knotting [D04G](#))**
  - 28/005 . {Reticulated structure comprising reinforcements of substantial or continuous length}
- 29/00 Producing belts or bands**
  - 29/06 . Conveyor belts
  - 29/08 . Toothed driving belts
  - 29/085 . . {Double-toothed driving belts}
  - 29/10 . Driving belts having wedge-shaped cross-section
  - 29/103 . . {Multi-ribbed driving belts}
  - 29/106 . . {Cogged driving belts}
- 30/00 Producing pneumatic or solid tyres or parts thereof (producing inner tubes [B29D 23/24](#); constructional form of tyres or parts thereof [B60C](#); connection of valves to inflatable elastic bodies [B60C 29/00](#); testing of tyres [G01M 17/02](#))**
  - 30/0005 . {Pretreatment of tyres or parts thereof, e.g. preheating, irradiation, precuring}
  - 2030/0011 . . {Surface activation of tyres or parts thereof, e.g. by plasma treatment}
  - 30/0016 . {Handling tyres or parts thereof, e.g. supplying, storing, conveying ([B29D 30/2607](#) takes precedence; loading and unloading vulcanizing presses [B29D 30/0603](#))}
  - 2030/0022 . . {Handling green tyres, e.g. transferring or storing between tyre manufacturing steps}
  - 2030/0027 . . {Handling cured tyres, e.g. transferring or storing after vulcanizing}
  - 2030/0033 . . {Rotating tyres or their components, e.g. carcasses, belt-tread packages, beads and the like, around their axis, i.e. for preventing deformation}
  - 2030/0038 . . {Handling tyre parts or semi-finished parts, excluding beads, e.g., storing, transporting, transferring ([B29D 2030/0044](#) takes precedence)}
  - 2030/0044 . . {Handling tyre beads, e.g., storing, transporting, transferring and supplying to the toroidal support or to the drum}
  - 30/005 . {General arrangement or lay-out of plants for the processing of tyres or parts thereof ([Round cores or cylindrical drums arranged for a single sequence of tire building operations \[B29D 30/10\]\(#\), \[B29D 30/20\]\(#\); Vulcanization presses \[B29D 30/0601\]\(#\)](#))}
  - 2030/0055 . . {Optimization of the cycle times of the tyre manufacturing process, e.g. adaptation of the tyre building process to the vulcanization process}
  - 30/0061 . {Accessories, details or auxiliary operations not otherwise provided for}
  - 2030/0066 . . {Tyre quality control during manufacturing}
  - 2030/0072 . . {Attaching fasteners to tyres, e.g. patches, in order to connect devices to tyres}
  - 2030/0077 . . {Directly attaching monitoring devices to tyres before or after vulcanization, e.g. microchips}
  - 2030/0083 . . {Attaching monitoring devices to tyres before or after vulcanization by inserting them inside tyre cavities}
  - 2030/0088 . . {Adaptive tyres, i.e. the properties of the tyres, e.g. the stiffness, being changeable during use}
  - 2030/0094 . . {Tyres been capable of generating, e.g. recovering, energy}
  - 30/02 . Solid tyres {; Moulds therefor}
  - 30/04 . Resilient fillings for rubber tyres; Filling tyres therewith
  - 30/06 . Pneumatic tyres or parts thereof {(e.g. produced by casting, moulding, compression moulding, injection moulding, centrifugal casting)}
  - 30/0601 . . {Vulcanising tyres; Vulcanising presses for tyres}
  - 30/0602 . . . {the vulcanising medium being in direct contact with the tyre}
  - 30/0603 . . . {Loading or unloading the presses}
  - 30/0605 . . . {Vulcanising presses characterised by moulds integral with the presses having radially movable sectors}
  - 30/0606 . . . {Vulcanising moulds not integral with vulcanising presses ([for solid tyres \[B29D 30/02\]\(#\)](#))}
  - 2030/0607 . . . . {Constructional features of the moulds (moulds or cores in general [B29C 33/00](#))}
  - 2030/0609 . . . . {the moulds being made of a plurality of laminations, e.g. thin plates, adjacent one another, so as to create the moulding cavity}
  - 2030/061 . . . . {Means for forming passages under the tread surface, e.g. undercuts, holes, channels, grooves}
  - 2030/0612 . . . . {Means for forming recesses or protrusions in the tyres, e.g. grooves or ribs, to create the tread or sidewalls patterns}
  - 2030/0613 . . . . {Means, e.g. sipes or blade-like elements, for forming narrow recesses in the tyres, e.g. cuts or incisions for winter tyres}

2030/0614	. . . . .	{porous moulds, e.g. sintered materials ( <a href="#">porous moulds in general B29C 33/3814</a> )}	30/0654	. . . .	{Flexible cores therefor, e.g. bladders, bags, membranes, diaphragms ( <a href="#">elastic cores or mandrels for shaping of plastics B29C 33/505</a> ; <a href="#">bags for isostatic pressing in compression moulding B29C 43/12</a> , <a href="#">B29C 43/3642</a> )}
2030/0616	. . . . .	{Surface structure of the mould, e.g. roughness, arrangement of slits, grooves or channels}	2030/0655	. . . . .	{Constructional or chemical features of the flexible cores}
2030/0617	. . . . .	{Venting devices, e.g. vent plugs or inserts}	2030/0657	. . . . .	{Removing the vulcanizing media from the flexible cores, e.g. draining or evacuating}
2030/0618	. . . . .	{Annular elements, e.g. rings, for moulding the tyre shoulder areas}	2030/0658	. . . . .	{Venting devices for the flexible cores}
2030/062	. . . . .	{Means for sealing the tyre against the mould in the bead areas}	2030/0659	. . . . .	{Details or accessories for the flexible cores not otherwise provided for}
2030/0621	. . . . .	{to seal the bead portions against the mould i.e. by using pressing devices}	30/0661	. . . .	{Rigid cores therefor, e.g. annular or substantially toroidal cores ( <a href="#">cores for building tyres B29D 30/12</a> ; <a href="#">drums for building tyres B29D 30/24</a> )}
2030/0622	. . . . .	{the pressing devices being collapsable, e.g. annular elements consisting of a plurality of sectors}	30/0662	. . . .	{Accessories, details or auxiliary operations}
2030/0623	. . . . .	{the pressing devices being flexible, e.g. annular elements being relatively elastic and deformable}	2030/0663	. . . . .	{Mould maintenance, e.g. cleaning, washing, repairing}
2030/0625	. . . . .	{the pressing devices being substantially rigid}	2030/0665	. . . . .	{Measuring, calculating and correcting tyre uniformity before vulcanization}
2030/0626	. . . . .	{the pressing devices being one-piece devices}	2030/0666	. . . . .	{Heating by using fluids ( <a href="#">heating, cooling or curing using liquids, gas or steam B29C 35/04</a> )}
2030/0627	. . . . .	{the pressing devices being ring-shaped}	2030/0667	. . . . .	{Circulating the fluids, e.g. introducing and removing them into and from the moulds; devices therefor}
30/0629	. . . . .	{with radially movable sectors}	2030/0669	. . . . .	{the fluids being circulated by a turbine type pump associated with the mould, e.g. positioned in the mould}
2030/063	. . . . .	{the moulds being split in upper and lower halves}	2030/067	. . . . .	{the vulcanizing fluids being gases or vapours}
2030/0631	. . . . .	{Means for forcing adjacent mould sectors away one from another, e.g. using springs or the like, to create repulsive forces}	2030/0671	. . . . .	{the vulcanizing fluids being liquids}
30/0633	. . . .	{After-treatment specially adapted for vulcanising tyres}	2030/0673	. . . . .	{the vulcanizing fluids being combinations of different kinds of fluids, e.g. steam and nitrogen}
2030/0634	. . . . .	{Measuring, calculating, correcting tyre uniformity, e.g. correcting RFV}	2030/0674	. . . . .	{Heating by using non-fluid means, e.g. electrical heating}
2030/0635	. . . . .	{Measuring and calculating tyre uniformity, e.g. using mathematical methods}	2030/0675	. . . . .	{Controlling the vulcanization processes}
2030/0637	. . . . .	{Correcting by adding material}	2030/0677	. . . . .	{Controlling temperature differences}
2030/0638	. . . . .	{Correcting by removing material, e.g. by grinding}	30/0678	. . . .	{Injection moulding specially adapted for tyres or parts thereof ( <a href="#">injection moulding in general B29C 45/00</a> )}
2030/0639	. . . . .	{Correcting by heat treatments}	30/0679	. . . .	{Centrifugal casting specially adapted for tyres or parts thereof ( <a href="#">centrifugal casting in general B29C 39/08</a> )}
2030/0641	. . . . .	{Correcting by restraining tyre deformation}	30/0681	. . . .	{Parts of pneumatic tyres; accessories, auxiliary operations}
2030/0642	. . . . .	{Correcting by stretching}	2030/0682	. . . .	{Inner liners ( <a href="#">tubeless tyres with impervious liner or coating on the tyre B60C 5/14</a> )}
30/0643	. . . . .	{Cooling during post cure inflation; Post cure inflators used therefor}	2030/0683	. . . .	{Additional internal supports to be positioned inside the tyre, as emergency supports for run-flat tyres}
30/0645	. . . .	{Devices for inserting vulcanising cores, i.e. bladders, into the tyres; Closing the press in combination herewith}	30/0685	. . . .	{Incorporating auto-repairing or self-sealing arrangements or agents on or into tyres ( <a href="#">auto-repairing or self-sealing arrangements or agents B29C 73/16</a> ; <a href="#">puncture preventing arrangements B60C 19/12</a> )}
2030/0646	. . . . .	{Attaching to, or removing the vulcanizing cores or bladders from the center mechanisms}	2030/0686	. . . . .	{Incorporating sealants on or into tyres not otherwise provided for; auxiliary operations therefore, e.g. preparation of the tyre}
2030/0647	. . . . .	{Supporting or transferring tyres using an assembly of a bladder and side rings}	2030/0687	. . . . .	{by incorporating the sealant into one chamber, e.g. bag, cell, tube or closed cavity}
30/0649	. . . .	{Devices for removing vulcanising cores, i.e. bladders, from the tyres; Opening the press in combination herewith}			
30/065	. . . .	{Tyre-vulcanising presses with two or more moulds, e.g. stacked upon each other}			
2030/0651	. . . . .	{the moulds being arranged side by side, or in a circle}			
2030/0653	. . . . .	{Exchanging moulds in the presses}			



2030/0689	. . . . .	{by incorporating the sealant into a plurality of chambers, e.g. bags, cells, tubes or closed cavities}	30/1642	. . . . .	{by feeding cut-to-length pieces in a direction perpendicular to the core axis and in a plane parallel to the core axis, and placing the pieces side-by-side to form an annular element}
2030/069	. . . . .	{through the use of a cylindrical support, e.g. a drum}	30/165	. . . . .	{by feeding cut-to-length pieces in a direction parallel to the core axis and placing the pieces side-by-side to form an annular element}
2030/0691	. . . . .	{through the use of a toroidal support, e.g. a core, a part of the tyre or an inner tube}	30/1657	. . . . .	{by feeding cut-to-length pieces in a direction inclined with respect to the core axis and placing the pieces side-by-side to form an annular element}
2030/0693	. . . . .	{the sealant being in the form of discrete particles, e.g. spheres or balls, filled with sealant}	2030/1664	. . . . .	{Details, accessories or auxiliary operations not provided for in the other subgroups of <a href="#">B29D 30/00</a> }
2030/0694	. . . . .	{the sealant being in the form of one or more narrow strips, e.g. applied by winding into the interior of the tyre}	2030/1671	. . . . .	{Venting air inclusions during the layer applications, e.g. by creating grooves, channels, passages, holes in the band-like tire component to be applied}
2030/0695	. . . . .	{the sealant being in the form of one wide strip, e.g. a patch}	2030/1678	. . . . .	{the layers being applied being substantially continuous, i.e. not being cut before the application step}
2030/0697	. . . . .	{the sealant being in liquid form, e.g. applied by spraying}	2030/1685	. . . . .	{the layers being applied being already cut to the appropriate length, before the application step}
2030/0698	. . . . .	{the sealant being applied by injection, e.g. introducing the sealant through a hole}	2030/1692	. . . . .	{Changing the orientation of the layers, e.g. plies, to be applied}
30/08	. . .	Building tyres	30/18	. . . .	Fitting the bead-rings or bead-cores; Folding the textile layers around the rings or cores
2030/082	. . .	{Optimizing the deposition of the layers on the tyre building support, e.g. by using mathematical methods}	30/20	. . .	by the flat-tyre method, i.e. building on cylindrical drums
2030/084	. . .	{Placing two side portions of the tyre into the mould and introducing, e.g. by extrusion or injection moulding, the tread material to create the toroidal tyre}	2030/201	. . . . .	{Manufacturing run-flat tyres}
2030/086	. . .	{Building the tyre carcass by combining two or more sub-assemblies, e.g. two half-carcasses}	2030/202	. . . . .	{the building drums being movable, i.e. not permanently connected to a fixed frame}
2030/088	. . .	{by using a seamless tubular component, e.g. an inner liner, a carcass structure or a belt/breaker during tyre manufacturing on a core or a building drum}	2030/203	. . . . .	{the fixtures supporting the cylindrical drums being non displaceable, i.e. substantially fixed to the floor}
30/10	. . .	on round cores, i.e. the shape of the core is approximately identical with the shape of the completed tyre	2030/204	. . . . .	{the fixtures supporting the cylindrical drums, e.g. turrets, being displaceable, e.g. movable along a path, rail or the like}
2030/105	. . . . .	{the cores being movable}	2030/205	. . . . .	{A single building drum being mounted on a fixture or supporting device, e.g. turret or turntable}
30/12	. . . . .	Cores	2030/206	. . . . .	{A plurality of building drums being mounted on a fixture or supporting device, e.g. turret or turntable}
30/14	. . . . .	Rolling-down or pressing-down the layers in the building process	2030/207	. . . . .	{the drum supporting device being rotatable around a horizontal axis}
30/16	. . . . .	Applying the layers; Guiding or stretching the layers during application {(applying tread bands to carcasses <a href="#">B29D 30/58</a> ; retreading <a href="#">B29D 30/54</a> )}	2030/208	. . . . .	{the drum supporting device being rotatable around a vertical axis}
30/1607	. . . . .	{by feeding a sheet perpendicular to the core axis and joining the ends to form an annular element (bending sheets and joining the edges <a href="#">B29C 53/42</a> )}	2030/209	. . . . .	{the drum supporting device being rotatable around an inclined axis}
30/1614	. . . . .	{by sliding a preformed tubular layer over the core}	30/22	. . . . .	Breaker plies being applied in the unexpanded state
30/1621	. . . . .	{by feeding a continuous band and winding it spirally, i.e. the band is fed without relative movement along the core axis, to form an annular element (winding and joining, spirally in general <a href="#">B29C 53/562</a> )}	30/24	. . . . .	Drums
30/1628	. . . . .	{by feeding a continuous band and winding it helically, i.e. the band is fed while being advanced along the core axis, to form an annular element (winding and joining, helically in general <a href="#">B29C 53/58</a> )}	2030/241	. . . . .	{Auxiliary drums used for temporary storage of the layers before application to the building drums}
30/1635	. . . . .	{by feeding a continuous band and moving it back and forth (zig-zag) to form an annular element}	30/242	. . . . .	{for manufacturing substantially cylindrical tyre components without cores or beads, e.g. treads or belts}
			30/243	. . . . .	{and with mechanisms for folding layers}

30/244	. . . . .	{for manufacturing substantially cylindrical tyre components with cores or beads, e.g. carcasses ( <a href="#">mechanisms for folding layers around cores or blads per se B29D 30/32</a> )}	2030/2671	. . . . .	{Holding the layers, e.g. the webs or the plies, in position onto the drum}
30/245	. . . . .	{Drums for the single stage building process, i.e. the building-up of the cylindrical carcass and the toroidal expansion of it are realised on the same drum ( <a href="#">expansion to a toroidal shape B29D 30/36</a> )}	2030/2678	. . . . .	{by using magnets}
30/246	. . . . .	{Drums for the multiple stage building process, i.e. the building-up of the cylindrical carcass is realised on one drum and the toroidal expansion is realised after transferring on another drum ( <a href="#">expansion to a toroidal shape B29D 30/36</a> )}	2030/2685	. . . . .	{by using mechanical means, e.g. jaws, grippers, pressing bars}
30/247	. . . . .	{Arrangements for the first stage only, e.g. means for radially expanding the drum to lock the beads ( <a href="#">B29D 30/245 takes precedence</a> )}	2030/2692	. . . . .	{by using suction means, e.g. vacuum producing devices}
30/248	. . . . .	{Drums of the undercut type without toroidal expansion, e.g. with provisions for folding down the plies, for positioning the beads under the surface of the drum}	30/28	. . . . .	Rolling-down or pressing-down the layers in the building process
30/26	. . . . .	Accessories or details, e.g. membranes, transfer rings	30/30	. . . . .	Applying the layers; Guiding or stretching the layers during application ( <a href="#">(applying tread bands to carcasses B29D 30/58; retreading B29D 30/54)</a> )
30/2607	. . . . .	{Devices for transferring annular tyre components during the building-up stage, e.g. from the first stage to the second stage building drum}	30/3007	. . . . .	{by feeding a sheet perpendicular to the drum axis and joining the ends to form an annular element ( <a href="#">bending sheets and joining the edges B29C 53/42</a> )}
2030/2614	. . . . .	{Bladders associated with the building drum, e.g. bladders used for the toroidal expansion, bladders for turning-up the plies}	30/3014	. . . . .	{by sliding a preformed tubular layer over the drum}
2030/2621	. . . . .	{Means for clamping bladders on the drum shoulders}	30/3021	. . . . .	{by feeding a continuous band and winding it spirally, i.e. the band is fed without relative movement along the drum axis, to form an annular element ( <a href="#">winding and joining, spirally in general B29C 53/562</a> )}
2030/2628	. . . . .	{Bladders for shaping the inner parts of the tyre beads or sidewalls}	30/3028	. . . . .	{by feeding a continuous band and winding it helically, i.e. the band is fed while being advanced along the drum axis, to form an annular element ( <a href="#">winding and joining, helically in general B29C 53/58</a> )}
2030/2635	. . . . .	{Central bladder, e.g. elastic membrane, sleeve, envelope, diaphragm, which covers the central portion of the drum, e.g. covering the toroidally expandable rigid segments}	30/3035	. . . . .	{by feeding a continuous band and moving it back and forth (zig-zag) to form an annular element}
2030/2642	. . . . .	{Adjusting the diameter of the drum, to match its circumference with the length of ply}	30/3042	. . . . .	{by feeding cut-to-length pieces in a direction perpendicular to the drum axis and in a plane parallel to the drum axis, and placing the pieces side-by-side to form an annular element}
2030/265	. . . . .	{Radially expandable and contractable drum comprising a set of circumferentially arranged elastic, flexible elements, e.g. blades or laminas, with or without expandable annular sleeve or bladder}	30/305	. . . . .	{by feeding cut-to-length pieces in a direction parallel to the drum axis and placing the pieces side-by-side to form an annular element}
2030/2657	. . . . .	{Radially expandable and contractable drum comprising a set of circumferentially arranged rigid elements, e.g. fingers or arms}	30/3057	. . . . .	{by feeding cut-to-length pieces in a direction inclined with respect to the drum axis and placing the pieces side-by-side to form an annular element}
2030/2664	. . . . .	{the drum comprising at least two portions that are axially separable, e.g. the portions being supported by different shafts, e.g. in order to facilitate the insertion of the beads}	2030/3064	. . . . .	{Details, accessories and auxiliary operations not otherwise provided for}
			2030/3071	. . . . .	{Venting air inclusions during the layer applications, e.g. by creating grooves, channels, passages, holes in the band-like tire component to be applied}
			2030/3078	. . . . .	{the layers being applied being substantially continuous, i.e. not being cut before the application step}
			2030/3085	. . . . .	{the layers being applied being already cut to the appropriate length, before the application step}
			2030/3092	. . . . .	{Changing the orientation of the layers, e.g. plies, to be applied}
			30/32	. . . . .	Fitting the bead-rings or bead-cores; Folding the textile layers around the rings or cores
			2030/3207	. . . . .	{Positioning the beads}

- 2030/3214 . . . . . {Locking the beads on the drum; details of the drum in the bead locking areas, e.g. drum shoulders}
- 2030/3221 . . . . . {Folding over means, e.g. bladders or rigid arms}
- 2030/3228 . . . . . {using one bladder acting on each side of the drum}
- 2030/3235 . . . . . {using two or more bladders acting on each side of the drum}
- 2030/3242 . . . . . {and with means for pressing the bladder against the ply material, e.g. bladder guide shoes, cages, arms}
- 2030/325 . . . . . {the means being radially expandable and contractible}
- 2030/3257 . . . . . {using pressing rollers}
- 2030/3264 . . . . . {using radially expandable, contractible mechanical means, e.g. circumferentially spaced arms, spring rollers, cages}
- 2030/3271 . . . . . {using air blasts}
- 2030/3278 . . . . . {Folding down the ends of the tubular tyre component, e.g. the carcass, over the drum shoulders}
- 2030/3285 . . . . . {Placing a cushioning element, e.g. a ring, aside or around the beads}
- 2030/3292 . . . . . {Interposing trap strips between beads and plies}
- 30/34 . . . . . by jointly covering two bead-rings, located parallel to each other at a distance apart, with fabric or cord layers
- 30/36 . . . . . Expansion of tyres in a flat form {, i.e. expansion to a toroidal shape independently of their building-up process}, e.g. of tyre built by the flat-tyre method or by jointly covering two bead-rings
- 30/38 . . . . . Textile inserts, e.g. cord or canvas layers, for tyres (making woven fabrics D03D); Treatment of inserts prior to building the tyre (pretreatment of inserts B29B 15/00; manufacture of layers comprising fibrous parallel reinforcements of substantial or continuous length B29C 70/20)
- 2030/381 . . . . . {the inserts incorporating reinforcing parallel cords; manufacture thereof}
- 2030/383 . . . . . {Chemical treatment of the reinforcing elements, e.g. cords, wires and filamentary materials, to increase the adhesion to the rubber (chemical pretreatment of the textile inserts B29D 30/40; pretreatment of reinforcements B29B 15/08; treating fibers, threads, yarns, fabrics in general D06M 15/00)}
- 2030/385 . . . . . {made by winding and joining a continuous reinforced rubber band onto a mandrel, to obtain a tubular article as an intermediate element in the manufacture of the insert}
- 2030/386 . . . . . {the tubular article being cut to obtain a flat, single-layer insert}
- 2030/388 . . . . . {the tubular article being flattened to obtain a two-layer insert}
- 30/40 . . . . . Chemical pretreatment of textile inserts before building the tyre
- 30/42 . . . . . Endless textile bands without bead-rings
- 2030/421 . . . . . {General aspects of the joining methods and devices for creating the bands (joining of preformed parts in general B29C 65/00)}
- 2030/422 . . . . . {Butt joining (single butt to butt joints in general B29C 66/1142)}
- 2030/423 . . . . . {Joining by overlapping (single lap to lap joints in general B29C 66/1122; single bevel to bevel joints in general B29C 66/1162)}
- 2030/424 . . . . . {the joining devices being angularly adjustable (joining devices characterized by the movement of the joining tools B29C 66/83)}
- 2030/425 . . . . . {the joining devices being laterally adjustable (joining devices characterized by the movement of the joining tools B29C 66/83)}
- 2030/426 . . . . . {the joining devices being longitudinally adjustable (joining devices characterized by the movement of the joining tools B29C 66/83)}
- 2030/427 . . . . . {Positioning the bands at the joining areas (positioning the parts to be joined in general B29C 65/7802)}
- 2030/428 . . . . . {Positioning the bands at the overlapping joining areas (positioning the parts to be joined by setting the overlap in general B29C 65/7835)}
- 30/44 . . . . . Stretching or treating the layers before application on the drum (during application B29D 30/30)
- 2030/4406 . . . . . {Adjusting the positions of the layers}
- 2030/4412 . . . . . {angularly}
- 2030/4418 . . . . . {laterally, e.g. sideways}
- 2030/4425 . . . . . {longitudinally}
- 2030/4431 . . . . . {by using gas flows, e.g. air jets blowing onto or underneath or sideways the layers}
- 2030/4437 . . . . . {Adjusting the dimensions of the layers}
- 2030/4443 . . . . . {Increasing the length of the layers, e.g. by stretching}
- 2030/445 . . . . . {Shortening the layers, e.g. by acting on the lateral edges or on the thickness or by cutting}
- 2030/4456 . . . . . {by using speed differences, e.g. between conveyors or between conveyor and drum}
- 2030/4462 . . . . . {by using grasping means}
- 2030/4468 . . . . . {Holding the layers}
- 2030/4475 . . . . . {by electrostatically charging the layers}
- 2030/4481 . . . . . {by using magnetic forces, e.g. magnets}
- 2030/4487 . . . . . {by using mechanical means, e.g. grippers or pressing bars}
- 2030/4493 . . . . . {by using suction means, e.g. vacuum}
- 30/46 . . . . . Cutting textile inserts to required shape
- 2030/463 . . . . . {Holding the textile inserts during cutting; means therefor}
- 2030/466 . . . . . {Cutting the textile inserts between cords}
- 30/48 . . . . . Bead-rings or bead-cores (from wire B21F 37/00); Treatment thereof prior to building the tyre
- 2030/481 . . . . . {Fillers or apexes}
- 2030/482 . . . . . {Applying fillers or apexes to bead cores}
- 2030/483 . . . . . {Treating the bead cores to increase rubber adhesion}
- 2030/485 . . . . . {the bead cores being made using a band containing a plurality of wires embedded in rubber}
- 2030/486 . . . . . {Additional components for the tyre bead areas, e.g. cushioning elements, chafers, flippers}

2030/487	. . .	{Forming devices for manufacturing the beads}	30/68	. . .	Cutting profiles into the treads of tyres
2030/488	. . .	{Clamping the wires on the forming devices}	2030/685	. . . .	{before tread vulcanization}
30/50	. . .	Covering, e.g. by winding, the separate bead-rings or bead-cores with textile material, e.g. with flipper strips ( <a href="#">folding textile layers around bead-rings or bead-cores B29D 30/18, B29D 30/32; jointly covering bead-rings or bead cores B29D 30/34</a> )	30/70	. .	Annular breakers
			2030/705	. . .	{the breakers being obtained by cutting a continuous reinforced strip into predefined lengths and placing the cut strips side by side on a suitable support, e.g. a toroidal core or a carcass}
30/52	. .	Unvulcanised treads, e.g. on used tyres; Retreading ( <a href="#">apparatus for forming {treads by extrusion B29C 47/00; apparatus for} vulcanising treads B29C 35/02; apparatus characterised by the means for holding wheels or parts thereof B60B 30/00</a> )	30/72	. .	Side-walls
			2030/722	. . .	{Reinforcing the sidewalls, e.g. by using filaments, fibers or additional reinforcing layers}
2030/523	. . .	{Ring-shaped treads}	2030/724	. . .	{Stiffening the sidewalls, e.g. by using additional inserts, e.g. made of rubber, plastics or other materials}
2030/526	. . .	{the tread comprising means for discharging the electrostatic charge, e.g. conductive elements or portions having conductivity higher than the tread rubber}	2030/726	. . .	{Decorating or marking the sidewalls before tyre vulcanization ( <a href="#">protecting, decorating, marking tyre sidewalls B60C 13/00</a> )}
			2030/728	. . .	{Decorating or marking the sidewalls after tyre vulcanization ( <a href="#">protecting, decorating, marking tyre sidewalls B60C 13/00</a> )}
30/54	. . .	Retreading			
2030/541	. . . .	{Abrading the tyre, e.g. buffing, to remove tread and/or sidewalls rubber, to prepare it for retreading}	<b>33/00</b>		<b>Producing bushes for bearings</b>
			<b>35/00</b>		<b>Producing footwear</b>
30/542	. . . .	{using envelopes or membranes provided with sealings for curing}			<b>NOTES</b>
2030/543	. . . . .	{Spreading the envelopes or membranes for inserting the tyre therein}			1. Classification is made in this group if the moulding technique is of interest.
2030/544	. . . .	{Applying an intermediate adhesive layer, e.g. cement or cushioning element between carcass and tread}			2. The assembling of individual parts by mechanical joining is classified in subclass <a href="#">A43D</a> , e.g. by gluing shoe parts <a href="#">A43D 25/00</a>
2030/545	. . . .	{Using chambers to apply heat and pressure, e.g. autoclaves for curing the retreaded tyres}	35/0009	. .	{by injection moulding; Apparatus therefor}
2030/546	. . . .	{Measuring, detecting, monitoring, inspecting, controlling}	35/0018	. .	{Moulds}
2030/547	. . . .	{Retreading solid tyres}	35/0027	. . .	{Last constructions; Mountings therefor}
2030/548	. . . .	{Removing the worn out tread from the carcass, e.g. by pulling a continuous wire embedded between tread and carcass}	35/0036	. . .	{with displaceable sole plates}
			35/0045	. . .	{Sealing means for the mould cavity}
2030/549	. . . .	{Means for holding the tyre on a support}	35/0054	. .	{by compression moulding, vulcanising or the like; Apparatus therefor}
30/56	. . . .	Retreading with prevulcanised tread ( <a href="#">B29D 30/542 takes precedence</a> )	35/0063	. .	{Moulds}
			35/0072	. . .	{Last constructions; Mountings therefor}
30/58	. . .	Applying bands of rubber treads, i.e. applying camel backs	35/0081	. . .	{with displaceable sole plates}
2030/582	. . . .	{Venting air inclusions, e.g. air trapped between tread and carcass}	35/009	. . .	{Sealing means for the mould cavity}
2030/585	. . . .	{Radially expanding annular treads to fit it over carcasses}	35/02	. .	made in one piece using a moulding technique, e.g. by injection moulding or casting
2030/587	. . . .	{Using isostatic pressure, e.g. bags or bladders, to press tread and carcass against each other}	35/04	. .	having multilayered parts
			35/06	. .	having soles or heels formed and joined on to preformed uppers using a moulding technique, e.g. by injection moulding, pressing and vulcanising
30/60	. . . .	by winding narrow strips	35/061	. .	{by injection moulding}
30/62	. . . .	by extrusion or injection of the tread on carcass	35/062	. . .	{using means to bond the moulding material to the preformed uppers}
			35/064	. . .	{using particular materials for the preformed uppers}
30/64	. . .	Tyre spreaders	35/065	. .	{by compression moulding, vulcanising or the like}
30/66	. . .	Moulding treads on to tyre casings, e.g. non-skid treads with spikes	35/067	. . .	{using means to bond the moulding material to the preformed uppers}
2030/662	. . . .	{Treads with antiskid properties, i.e. with spikes}	35/068	. . .	{using particular materials for the preformed uppers}
2030/665	. . . .	{Treads containing inserts other than spikes, e.g. fibers or hard granules, providing antiskid properties}	35/08	. .	having multilayered parts
2030/667	. . . .	{Treads with antiskid properties, e.g. having special patterns or special rubber compositions}	35/081	. . .	{by injection moulding}
			35/082	. . . .	{injecting first the outer sole part}
			35/084	. . . .	{using exchangeable mould elements}



- 35/085 . . . {by compression moulding, vulcanising or the like}
- 35/087 . . . . {forming first the outer sole part}
- 35/088 . . . . {using exchangeable mould elements}
- 35/10 . having preformed soles or heels joined on to preformed uppers using a moulding technique, e.g. by feeding or injecting plastics material between the parts to be joined
- 35/12 . Producing parts thereof, e.g. soles, heels, uppers, by a moulding technique
- 35/122 . . {Soles}
- 35/124 . . {Heels}
- 35/126 . . {Uppers}
- 35/128 . . {Moulds or apparatus therefor}
- 35/14 . . Multilayered parts
- 35/142 . . . {Soles}
- 35/144 . . . {Heels}
- 35/146 . . . {Uppers}
- 35/148 . . . {Moulds or apparatus therefor}
- 99/00 Subject matter not provided for in other groups of this subclass {not used, see subgroups}**
- 99/0003 . {Producing profiled members, e.g. beams}
- 99/0007 . . {having a variable cross-section}
- 99/001 . {Producing wall or panel-like structures, e.g. for hulls, fuselages, or buildings (articles with hollow walls [B29D 24/00](#))}
- 99/0014 . . {provided with ridges or ribs, e.g. joined ribs}
- 99/0017 . . . {with filled hollow ridges}
- 99/0021 . . {provided with plain or filled structures, e.g. cores, placed between two or more plates or sheets, e.g. in a matrix}
- 99/0025 . {Producing blades or the like, e.g. blades for turbines, propellers, or wings}
- 99/0028 . . {hollow blades}
- 99/0032 . {Producing rolling bodies, e.g. rollers, wheels, pulleys or pinions (bushes for bearings [B29D 33/00](#); gear wheels [B29D 15/00](#))}
- 99/0035 . . {rollers or cylinders having an axial length of several times the diameter, e.g. for embossing, pressing, or printing}
- 99/0039 . {Producing countertops}
- 99/0042 . {Producing plain balls (hollow balls [B29D 22/04](#))}
- 99/0046 . {Producing rods (connecting-rods formed from fiber-reinforced resins [F16C 7/026](#))}
- 99/005 . {Producing membranes}
- 99/0053 . {Producing sealings ([B29D 99/0085](#) takes precedence)}
- 99/0057 . {Producing floor coverings}
- 99/006 . {Producing casings, e.g. accumulator cases}
- 99/0064 . {Producing wearing apparel}
- 99/0067 . . {Gloves}
- 99/0071 . . {Masks, e.g. gas masks}
- 99/0075 . . {Bathing caps}
- 99/0078 . {Producing filamentary materials}
- 99/0082 . {Producing articles in the form of closed loops, e.g. rings ([B29D 29/00](#) takes precedence)}
- 99/0085 . . {for sealing purposes}
- 99/0089 . {Producing honeycomb structures (consisting of porous ceramic ware [C04B 38/0006](#))}
- 99/0092 . {Producing upholstery articles, e.g. cushions, seats ([B29C 63/025](#) takes precedence)}
- 99/0096 . {Producing closure members for containers, e.g. closure caps or stoppers}