B29D

PRODUCING PARTICULAR ARTICLES FROM PLASTICS OR FROM SUBSTANCES IN A PLASTIC STATE

IN A PLASTIC STATE

(making granules B29B 9/00; making preforms B29B 11/00)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00 Producing articles with screw-threads

1/005 . { fibre reinforced}

5/00 Producing elements of slide fasteners; Combined making and attaching of elements of slide fasteners

5/02 . the fasteners having separate interlocking members

5/04 . the interlocking members being formed by continuous meander of filamentary material

5/06 . the interlocking members being formed by continuous helix

5/08 . the interlocking members being formed by profiled or castellated edge of a stringer

5/10 . the interlocking members being formed by continuous profiled strip

7/00 Producing flat articles, e.g. films or sheets

( B29D 24/00 takes precedence)

7/01 . Films or sheets

2009/00 IPC7 Producing layered products

(Frozen)

WARNING

Group B29D 2009/00 is no longer used for classification of documents as January 1, 2019.

The content of this group is being reclassified into groups B29C 39/021, B29C 39/023, B29C 39/025, B29C 39/12, B29C 39/123, B29C 39/126, B32B 3/00 and B32B 33/00.

All groups listed in this Warning should be considered in order to perform a complete search.

11/00 Producing optical elements, e.g. lenses or prisms

(grinding or polishing of optical elements B24B; constrictional form of optical elements G02B; {optical parts of spectacles G02C 7/00})

11/00009 . {Production of simple or compound lenses}

11/00019 . . {with non-spherical faces, e.g. toric faces}

11/00028 . . {Bifocal lenses; Multifocal lenses}

11/00038 . . {Production of contact lenses}

11/00048 . . {composed of parts with dissimilar composition (B29D 11/00057 takes precedence)}

11/00057 . . . {characterised by the shape or surface condition of the edge, e.g. flashless, burrless, smooth}

11/00067 . . . {Hydrating contact lenses}

11/00076 . . . {enabling passage of fluids, e.g. oxygen, tears, between the area under the lens and the lens exterior}

11/00086 . . . {methods for matching the anterior surface of the contact lens to the shape of an eyeball}

11/00096 . . . {for delivering compositions, e.g. drugs to the eye}

11/00105 . . . {covering a large part of the cornea}

11/00115 . . . {made by rotational casting}

11/00125 . . . {Auxiliary operations, e.g. removing oxygen from the mould, conveying moulds from a storage to the production line in an inert atmosphere}

11/00134 . . . {Curing of the contact lens material}

11/00144 . . . . {wherein the lens material is not fully polymerized, e.g. by leaving an unpolymerized volume}

11/00153 . . . . {Differential curing, e.g. by differential radiation}

11/00163 . . . . . {Movable masks or shutters, e.g. to vary the exposure}

11/00173 . . . . . {Conveying moulds}

11/00182 . . . . . {using carrier plates}

11/00192 . . . . . {Demoulding, e.g. separating lenses from mould halves}

11/00201 . . . . . {using cooling means}

11/00211 . . . . . {using heating means}

11/00221 . . . . . {using prying means}

11/0023 . . . . . . {Transferring contact lenses}

11/0024 . . . . . . {using a vacuum suction gripper}

11/0025 . . . . . . {Removing impurities from contact lenses, e.g. leaching}

11/00259 . . . . {Plants for the production of contact lenses}

11/00269 . . . . {Fresnel lenses}

11/00278 . . . . {Lenticular sheets (B29D 11/00269 takes precedence)}

11/00288 . . . . {made by a rotating cylinder}
(Production of light guides)

{ Production of filters }
{ Production of reflex reflectors }
{ Mirrors }

{ photochromic }
{ polarizing }

{ Production of microlenses (lenticular sheets B29D 11/00278) }
{ Production of lenses with markings or patterns }
{ having partial surface properties, e.g. a micropattern }

{ by making depressions in the lens surfaces }
{ having nanosize structures or features, e.g. fillers }
{ with a refractive index gradient }

{ by moulding lenses in holes through a substrate }
{ Local shaping by heating, e.g. local irradiation causing expansion }

{ Producing solid immersion lenses [SIL] }
{ Producing compound lenses }
{ 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 (B29D 11/00019 - B29D 11/00355; B29D 11/00423, B29D 11/00432 take precedence) }
{ Plants for the production of simple or compound lenses (B29D 11/00259 takes precedence) }

{ Auxiliary operations, e.g. machines for filling the moulds (B29D 11/00125 takes precedence) }
{ Curing the lens material }

{ Changing a shape by remelting }

{ Adjusting the refractive index, e.g. after implanting }

{ made by rotational casting (B29D 11/00115 takes precedence) }

{ Moulds for lenses (moulds for plastic articles in general B29C 33/00) }

{ Double sided moulds }

{ having means for aligning the front and back moulds }

{ to make toric lenses }

{ Reusable moulds }

{ Consisting of two mould halves joined by an annular gasket }

{ Feeding arrangements }

{ with surfaces formed by films }

{ with deformable mould walls, e.g. to make lenses with different shapes }

{ wherein the mould forms part of the final package for lenses }

{ with means to engage flash, e.g. HEMA ring }

{ [and removing the flash or HEMA ring] }

{ Mirrors }

{ Production of reflex reflectors }

{ 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) }

{ Moulds for reflex reflectors (moulds for plastic articles in general B29C 33/00) }

{ Production of filters }

{ polarizing }

{ photochromic }

{ Production of light guides }

| 11/0073 | (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 13/055)) |
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)
<table>
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<tr>
<th>CPC</th>
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<tr>
<td>15/00</td>
<td>Producing gear wheels or similar articles with grooves or projections, e.g. control knobs</td>
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<td>16/00</td>
<td>Producing articles with corrugations (B29D 23/18 takes precedence)</td>
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<tr>
<td>17/00</td>
<td>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</td>
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<tr>
<td>17/002</td>
<td>[Producing phonograph records]</td>
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<tr>
<td>17/005</td>
<td>[Producing optically read record carriers, e.g. optical discs]</td>
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<td>17/007</td>
<td>[Forming the relief pattern on a support larger than the record]</td>
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<td>19/00</td>
<td>Producing buttons or semi-finished parts of buttons</td>
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<tr>
<td>19/04</td>
<td>by cutting, milling, turning, stamping, or perforating moulded parts; Surface treatment of buttons</td>
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<tr>
<td>19/06</td>
<td>Devices for feeding semi-finished parts to the processing machines</td>
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<td>19/08</td>
<td>Making holes in buttons or in semi-finished parts thereof</td>
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<td>21/00</td>
<td>Producing hair combs or similar toothed or slotted articles</td>
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<td>21/04</td>
<td>by sawing, milling, cutting, or similar operations</td>
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<td>21/06</td>
<td>Polishing</td>
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<td>22/00</td>
<td>Producing hollow articles (tubular articles B29D 23/00; pneumatic tyres B29D 30/00)</td>
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<td>22/003</td>
<td>Containers for packaging, storing or transporting, e.g. bottles, jars, cans, barrels, tanks</td>
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<td>22/006</td>
<td>[Hot water bottles]</td>
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<td>22/02</td>
<td>Inflatable articles</td>
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<td>Air springs; Air bellows (construction of fluid springs F16F 9/00)</td>
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<td>22/026</td>
<td>Ring shaped inner tubes with ends (endless inner tubes B29D 23/24)</td>
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<td>22/04</td>
<td>Spherical articles, e.g. balls (B29D 22/02 takes precedence)</td>
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<td>23/00</td>
<td>Producing tubular articles (B29D 24/00 takes precedence)</td>
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<td>23/001</td>
<td>Pipes; Pipe joints (pleated hoses B29D 23/18)</td>
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<tr>
<td>23/003</td>
<td>Pipe joints, e.g. straight joints</td>
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<td>23/005</td>
<td>Provided with electrical wiring</td>
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<td>23/006</td>
<td>Elbows</td>
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<td>23/008</td>
<td>T-joints</td>
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<td>Pleated (or corrugated) hoses</td>
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<td>23/20</td>
<td>Flexible squeeze tubes, e.g. for cosmetics</td>
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<td>23/24</td>
<td>Endless tubes, e.g. inner tubes for pneumatic tyres (producing ring shaped inner tubes with ends B29D 22/02; inflatable inner tubes for tyres B60C 5/00)</td>
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<td>24/00</td>
<td>Producing articles with hollow walls (B29D 99/0028 takes precedence)</td>
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<tr>
<td>24/001</td>
<td>formed of hollow ridges or ribs, e.g. separate ridges; continuous corrugated structure (B29D 24/008 takes precedence)</td>
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<td>24/002</td>
<td>formed with structures, e.g. cores placed between two plates or sheets, e.g. partially filled (totally filled B29D 99/0021)</td>
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<tr>
<td>24/004</td>
<td>the structure having vertical or oblique ribs</td>
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<tr>
<td>24/005</td>
<td>the structure having joined ribs, e.g. honeycomb</td>
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<tr>
<td>24/007</td>
<td>[and a chamfered edge]</td>
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<tr>
<td>24/008</td>
<td>the structure having hollow ridges, ribs or cores</td>
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<td>25/00</td>
<td>Producing frameless domes</td>
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<td>28/00</td>
<td>Producing nets or the like, (e.g. meshes, lattices) (by knotting D04G)</td>
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<td>28/005</td>
<td>[Reticulated structure comprising reinforcements of substantial or continuous length]</td>
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<td>29/00</td>
<td>Producing belts or bands</td>
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<td>29/06</td>
<td>Conveyor belts</td>
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<td>Toothed driving belts</td>
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<td>Double-toothed driving belts</td>
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<td>Driving belts having wedge-shaped cross-section</td>
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<td>29/106</td>
<td>Cogged driving belts</td>
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<td>30/00</td>
<td>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)</td>
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<td>30/0005</td>
<td>Pretreatment of tyres or parts thereof, e.g. preheating, irradiation, precuring</td>
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<td>30/0011</td>
<td>Surface activation of tyres or parts thereof, e.g. by plasma treatment</td>
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<td>30/0016</td>
<td>Handling tyres or parts thereof, e.g. supplying, storing, conveying (B29D 30/2607 takes precedence; loading and unloading vulcanizing presses B29D 30/0603)</td>
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<td>30/0022</td>
<td>Handling green tyres, e.g. transferring or storing between tyre manufacturing steps</td>
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<td>30/0027</td>
<td>Handling cured tyres, e.g. transferring or storing after vulcanizing</td>
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<td>30/0033</td>
<td>Rotating tyres or their components, e.g. carcasses, belt-tread packages, beads and the like, around their axis, i.e. for preventing deformation</td>
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<tr>
<td>30/0038</td>
<td>Handling tyre parts or semi-finished parts, excluding beads, e.g. storing, transporting, transferring (B29D 2030/0044 takes precedence)</td>
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<tr>
<td>30/0044</td>
<td>Handling tyre beads, e.g., storing, transporting, transferring and supplying to the toroidal support or to the drum</td>
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<tr>
<td>30/005</td>
<td>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)</td>
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<td>30/0061</td>
<td>Accessories, details or auxiliary operations not otherwise provided for</td>
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<td>30/0066</td>
<td>Tyre quality control during manufacturing</td>
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<tr>
<td>30/0072</td>
<td>Attaching fasteners to tyres, e.g. patches, in order to connect devices to tyres</td>
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<tr>
<td>30/0077</td>
<td>Directly attaching monitoring devices to tyres before or after vulcanization, e.g. microchips</td>
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</table>
casting, moulding, compression moulding, injection
pneumatic tyres or parts thereof { (e.g. produced by
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)]

30/0607 . [Constructional features of the moulds
(moulds or cores in general B29C 33/00)]
30/0609 . [the moulds being made of a plurality
of laminations, e.g. thin plates, adjacent
one another, so as to create the moulding
cavity]
30/061 . [Means for forming passages under
the tread surface, e.g. undercuts, holes,
channels, grooves]
30/0612 . [Means for forming recesses or
protrusions in the tyres, e.g. grooves or
ribs, to create the tread or sidewalls
patterns]
30/0613 . [Means, e.g. sipes or blade-like elements,
for forming narrow recesses in the tyres,
e.g. cuts or incisions for winter tyres]
30/0614 . [Porous moulds, e.g. sintered
materials (porous moulds in general
B29C 33/3814)]
30/0616 . [Surface structure of the mould, e.g.
roughness, arrangement of slits, grooves or
channels]
30/0617 . [Venting devices, e.g. vent plugs or
inserts]
30/0618 . [Annular elements, e.g. rings, for
moulding the tyre shoulder areas]
30/062 . [Means for sealing the tyre against the
mould in the bead areas]
30/0621 . {to seal the bead portions against the
mould i.e. by using pressing devices
30/0622 . [the pressing devices being
collapsible, e.g. annular elements consisting of a plurality of sectors]
30/0623 . [the pressing devices being flexible,
e.g. annular elements being relatively
elastic and deformable]
30/0625 . [the pressing devices being
substantially rigid]
30/0626 . [the pressing devices being one-piece
devices]
Building tyres

Optimizing the deposition of the layers on the tyre building support, e.g. by using mathematical methods

Circulating the fluids, e.g. introducing and removing them into and from the moulds; devices therefor

The fluids being circulated by a turbine type pump associated with the mould, e.g. positioned in the mould

The vulcanizing fluids being gases or vapours

The vulcanizing fluids being liquids

The vulcanizing fluids being combinations of different kinds of fluids, e.g. steam and nitrogen

Heating by using non-fluid means, e.g. electrical heating

Controlling the vulcanization processes

Controlling temperature differences

Injection moulding specially adapted for tyres or parts thereof (injection moulding in general B29C 45/00)

Centrifugal casting specially adapted for tyres or parts thereof (centrifugal casting in general B29C 39/08)

Parts of pneumatic tyres; accessories, auxiliary or parts thereof (centrifugal casting in general B29C 45/00)

Injection moulding specially adapted for tyres or parts thereof (injection moulding in general B29C 45/00)

Optimizing the deposition of the layers on the tyre building support, e.g. by using mathematical methods

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

Building the tyre carcass by combining two or more sub-assemblies, e.g. two half-carcasses

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

on round cores, i.e. the shape of the core is approximately identical with the shape of the completed tyre

the cores being moveable

Cores

Rolling-down or pressing-down the layers in the building process

Applying the layers; Guiding or stretching the layers during application (applying tread bands to carcasses B29D 30/58; retreading B29D 30/54)

by feeding a sheet perpendicular to the core axis and joining the ends to form an annular element (winding and joining, spirally in general B29C 53/562)

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 B29C 53/562)

by feeding a continuous band and moving it back and forth (zig-zag) to form an annular element

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

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

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

Details, accessories or auxiliary operations not provided for in the other subgroups of B29D 30/00

Venting air inclusions during the layer applications, e.g. by creating grooves, channels, passages, holes in the band-like tire component to be applied

the layers being applied being substantially continuous, i.e. not being cut before the application step
cylindrical drums by the flat-tyre method, i.e. building on

Drums

Breaker plies being applied in the

around an inclined axis }

around a vertical axis }

{ the drum supporting device being rotatable

e.g. turret or turntable }

mounted on a fixture or supporting device,

{ A plurality of building drums being movable along a path, rail or the like }

{ the fixtures supporting the cylindrical

 Substantially fixed to the floor }

drums being non displaceable, i.e.

{ the fixtures supporting the cylindrical

drums }

drums }

Manufacturing run-flat tyres }

[manufacturing substantially

cylindrical tyre components without cores

or beads, e.g. treads or belts]

{ and with mechanisms for folding

layers ]

{ for manufacturing substantially

cylindrical tyre components with cores

or beads, e.g. carcasses (mechanisms for

folding layers around cores or blads per se

B29D 30/32]}

Drums

{ for auxiliary drums used for temporary

storage of the layers before application to

the building drums] }

{ by sliding a preformed tubular layer over

an annular element (bending sheets and

joining the edges B29C 53/42) }

{ by feeding a sheet perpendicular to the

drum axis and joining the ends to form

a drum or toroidal shell (B29D 30/33] }

{ by using suction means, e.g. vacuum

jaws, grippers, pressing bars] }

{ by using mechanical means, e.g.

jaws, grippers, pressing bars] }

{ by using suction means, e.g. vacuum

producing devices] }

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] }

Devices for transferring annular tyre

components during the building-up

stage, e.g. from the first stage to the

second stage building drum ]

Bladders associated with the building
drum, e.g. bladders used for the toroidal

expansion, bladders for turning-up the

plies] }

Means for clamping bladders on the

drum shoulders] }

Bladders for shaping the inner parts of

the tyre beads or sidewalls] }

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 ]}

Adjusting the diameter of the drum, to

match its circumference with the length

of ply ]}

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] }

Radially expandable and

contractable drum comprising a set

of circumferentially arranged rigid

elements, e.g. fingers or arms] }

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] }

Holding the layers, e.g. the webs or the

plies, in position onto the drum] }

(by using magnets] }

(by using mechanical means, e.g.

jaws, grippers, pressing bars] }

(by using suction means, e.g. vacuum

producing devices] }

Rolling-down or pressing-down the layers

in the building process] }

Applying the layers; Guiding or stretching

the layers during application [(applying
tread bands to carcasses B29D 30/58; retreading

B29D 30/54]}

(by feeding a sheet perpendicular to the

drum axis and joining the ends to form

an annular element (bending sheets and

joining the edges B29C 53/42) ]}

(by sliding a preformed tubular layer over

the drum] )

Arrangements for the first stage

only, e.g. means for radially

expanding the drum to lock the beads

(B29D 30/245 takes precedence) ]
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 (winding and joining, spirally in general B29C 53/562))

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 (winding and joining, helically in general B29C 53/58))

30/3035 . . . . . (by feeding a continuous band and moving it back and forth (zig-zag) to form an annular element)

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)

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)

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)

2030/3064 . . . . . (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 cushioning element, e.g. a ring, between the beads)

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 tyres built by the flat-tyres 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 15/06; 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 15/06; 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))
B29D

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 . . . . . [Holding the layers]
2030/4468 . . . . . (by electrostatically charging the layers]
2030/4475 . . . . . (by using magnetic forces, e.g. magnets)
2030/4481 . . . . . (by using mechanical means, e.g. grippers or pressing bars)
2030/4487 . . . . . (by using suction means, e.g. vacuum)
30/46 . . . . . Cutting textile inserts to required shape
30/463 . . . . . [Holding the textile inserts during cutting; means therefor]
30/466 . . . . . [Cutting the textile inserts between cords]
30/48 . . . . . Bead-rings or bead-cores (from wire B21F 37/00); Treatment thereof prior to building the tire
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 tire bead areas, e.g. cushioning elements, chafer, flippers]
2030/487 . . . . . [Forming devices for manufacturing the beads]
2030/488 . . . . . [Clamping the wires on the forming devices]
30/50 . . . . . Covering, e.g. by winding, the separate bead-rings or bead-cores with textile material, e.g. with flipper strips (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)
30/52 . . . . . Unvulcanised treads, e.g. on used tyres; Retreading (apparatus for forming [treads by extrusion B29C 48/10; apparatus for] vulcanising treads B29C 35/02; apparatus characterised by the means for holding wheels or parts thereof B60B 30/00)
30/523 . . . . . [Ring-shaped treads]
30/526 . . . . . [the tread comprising means for discharging the electrostatic charge, e.g. conductive elements or portions having conductivity higher than the tread rubber]

30/54 . . . . . Retreading
2030/541 . . . . . [Abrading the tyre, e.g. buffing, to remove tread and/or sidewalls rubber, to prepare it for retreading]
30/542 . . . . . [using envelopes or membranes provided with sealings for curing]
2030/543 . . . . . [Spreading the envelopes or membranes for inserting the tyre therein]
2030/544 . . . . . [Applying an intermediate adhesive layer, e.g. cement or cushioning element between carcass and tread]
2030/545 . . . . . [Using chambers to apply heat and pressure, e.g. autoclaves for curing the retreaded tyres]
2030/546 . . . . . [Measuring, detecting, monitoring, inspecting, controlling]
2030/547 . . . . . [Retreading solid tyres]
2030/548 . . . . . [Removing the worn out tread from the carcass, e.g. by pulling a continuous wire embedded between tread and carcass]
2030/549 . . . . . [Means for holding the tyre on a support]
30/56 . . . . . Retreading with prevulcanised tread ([B29D 30/542 takes precedence])
30/58 . . . . . Applying bands of rubber treads, i.e. applying camel backs
2030/582 . . . . . [Venting air inclusions, e.g. air trapped between tread and carcass]
2030/585 . . . . . [Radially expanding annular treads to fit it over carcasses]
2030/587 . . . . . [Using isostatic pressure, e.g. bags or bladders, to press tread and carcass against each other]
30/60 . . . . . by winding narrow strips
30/62 . . . . . by extrusion or injection of the tread on carcass
30/64 . . . . . Tyre spreaders
30/66 . . . . . Moulding treads on to tyre casings, e.g. non-skid treads with spikes
2030/662 . . . . . [Treads with antiskid properties, i.e. with spikes]
2030/665 . . . . . [Treads containing inserts other than spikes, e.g. fibers or hard granules, providing antiskid properties]
2030/667 . . . . . [Treads with antiskid properties, e.g. having special patterns or special rubber compositions]
30/68 . . . . . Cutting profiles into the treads of tyres
2030/685 . . . . . [before tread vulcanization]
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]
30/72 . . . . . Side-walls
2030/722 . . . . . [Reinforcing the sidewalls, e.g. by using filaments, fibers or additional reinforcing layers]
2030/724 . . . . . [Stiffening the sidewalls, e.g. by using additional inserts, e.g. made of rubber, plastics or other materials]
2030/726 . . . . . [Decorating or marking the sidewalls before tyre vulcanization (protecting, decorating, marking tyre sidewalls B60C 13/00)]
35/00 Producing footwear

NOTES
1. Classification is made in this group if the moulding technique is of interest.
2. The assembling of individual parts by mechanical joining is classified in subclass A43D, e.g. by gluing shoe parts A43D 25/00

35/0009 . . . (by injection moulding; Apparatus therefor)
35/0018 . . . (Moulds)
35/0027 . . . (Last constructions; Mountings therefor)
35/0036 . . . (with displaceable sole plates)
35/0045 . . . (Sealing means for the mould cavity)
35/0054 . . . (by compression moulding, vulcanising or the like; Apparatus therefor)
35/0063 . . . (Moulds)
35/0072 . . . (Last constructions; Mountings therefor)
35/0081 . . . (with displaceable sole plates)
35/009 . . . (Sealing means for the mould cavity)
35/02 . made in one piece using a moulding technique, e.g. by injection moulding or casting
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
35/061 . . . (by injection moulding)
35/062 . . . (using means to bond the moulding material to the preformed uppers)
35/064 . . . (using means to bond the moulding material to the preformed uppers)
35/065 . . . (by compression moulding, vulcanising or the like)
35/067 . . . (using means to bond the moulding material to the preformed uppers)
35/068 . . . (using means to bond the moulding material to the preformed uppers)
35/08 . having multilayered parts
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)
35/09 . 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)