

ECLA EUROPEAN CLASSIFICATION

- B31F** **MECHANICAL WORKING OR DEFORMATION OF PAPER OR CARDBOARD** (cutting, trimming, in general [B26](#); incising, scoring, in general [B26D3/08](#); making layered products not composed wholly of paper or cardboard [B32B](#); multi-ply material of paper or cardboard, its manufacture [D21H](#))
- B31F1/00** **Mechanical deformation of paper or cardboard without removing material including combined deformation and laminating** (embossing combined with application of ink, type marking presses, selective embossing machines [B41E](#), [B41J](#), [B41K](#), [B41M](#); machines or apparatus for embossing decorations or marks [B44B5/00](#); artists hand tools for embossing [B44B11/04](#); producing decorative effects by processes for stamping ornamental designs on surfaces [B44C1/24](#); mechanical deformation during paper or board making, kinds of paper or board [D21](#))
- [B31F1/00A](#) . [N: Shaping by bending, folding, twisting, straightening, flattening or rim-rolling; Shaping by bending, folding or rim-rolling combined with joining; Apparatus therefor (shaping of tube ends [B31F1/00C](#))]
- [B31F1/00A2](#) . . [N: Bending or folding; Folding edges combined with joining; Reinforcing edges during the folding thereof; (creasing [B31F1/08](#), crêping paper [B31F1/12](#), corrugating [B31F1/20](#); bending and joining [B31F1/00A6](#), stretching and folding [B31F1/00B2B2](#); Reinforcing edges per se [B31F5/08](#); making wound articles [B31C](#), folding thin material per se [B65H45/00](#))]
- [B31F1/00A2B](#) . . . [N: of plates, sheets or webs]
- [B31F1/00A2B2](#) [N: combined with making folding lines ([B31F1/00A2B8B](#) takes precedence)]
- [B31F1/00A2B4](#) [N: Folding edges; Folding edges combined with joining; Reinforcing edges during the folding thereof, e.g. by introducing a thread; Folding the edges of a sheathing ([B31F1/00A2B8C](#) takes precedence)]
- [B31F1/00A2B8](#) [N: the plates, sheets or webs moving continuously ([B31F5/08](#) takes precedence)]
- [B31F1/00A2B8B](#) [N: combined with making folding lines]
- [B31F1/00A2B8B2](#) [N: Making the folding lines using rotary tools]
- [B31F1/00A2B8C](#) [N: Folding edges; Folding edges combined with joining; Reinforcing edges during the folding thereof, e.g. by introducing a thread; Folding the edges of a sheathing]
- [B31F1/00A2C](#) . . . [N: of tubes]
- [B31F1/00A4](#) . . [N: Straightening or flattening]
- [B31F1/00A5](#) . . [N: Rim-rolling]
- [B31F1/00A5B](#) . . . [N: combined with joining]
- [B31F1/00A6](#) . . [N: Bending or folding combined with joining ([Folding edges combined with joining](#) [B31F1/00A2B4](#), [B31F1/00A2B8C](#))]
- [B31F1/00A6B](#) . . . [N: Bending plates, sheets or webs at right angles to the axis of the article being formed and joining the edges]
- [B31F1/00A6B2](#) [N: for making articles of definite length]
- [B31F1/00A6B2B](#) [N: using internal forming surfaces, e.g. mandrels]
- [B31F1/00A6B2B2](#) [N: Machines therefor having additional mandrels, e.g. mounted on a turntable, or on chains ([B31F1/00A6B2B4B](#) takes precedence)]
- [B31F1/00A6B4](#) [N: for making articles of indefinite length]

- B31F1/00A6B4B [N: using internal forming surfaces, on e.g. mandrels]
- B31F1/00A6B4C [N: using only external forming surfaces, e.g. sleeves]
- B31F1/00A6B6 [N: for making articles with multilayered walls]
- B31F1/00A6B9 [N: Making essentially non-hollow profiles, e.g. rods, ropes, cords]

- B31F1/00B [N: Shaping by methods analogous to moulding, e.g. deep drawing techniques]

- B31F1/00C [N: Shaping of tube ends, e.g. flanging, beelling, closing, rim-rolling, corrugating; Fixing elements to tube ends]
- B31F1/00C4 [N: Closing]
- B31F1/00C6 [N: Rim-rolling]
- B31F1/00C6B [N: combined with joining, e.g. for fixing a closure element]
- B31F1/00C9 [N: Fixing elements to tube ends]

- B31F1/00D [N: Lining or sheathing (folding the edge of the sheathing [B31F1/00A2B4](#), [B31F1/00A2B8C](#))]

- B31F1/07 Embossing, [N: i.e. producing impressions formed by locally deep-drawing, e.g. using rolls provided with complementary profiles] ([N: [B31F1/12K](#) takes precedence;] corrugating [B31F1/20](#))

- B31F1/08 Creasing (corrugating [B31F1/20](#); zig-zag folding [B65H45/20](#)) [N: (combined with folding [B31F1/00A2B2](#), [B31F1/00A2B8B](#); grooving by cutting [B26D3/06](#), [B26D3/08](#); by milling grooves [B23C3/30](#); of plastics material [B29C53/06](#))]
- B31F1/10 by rotary tools

- B31F1/12 Crêping paper, [N: i.e. providing paper with small irregular crinkles; Making paper elastic in all directions]
- B31F1/12B [N: the paper being submitted to an additional mechanical deformation other than crêping, e.g. for making it elastic in all directions]
- B31F1/12D [N: Multiple crêping, e.g. forming crêpes under different angles]
- B31F1/12F [N: including making of the paper to be crêped]
- B31F1/12K [N: Making paper elastic in all directions, other than by crêping ([B31F1/12B](#) takes precedence)]

- B31F1/14 by doctor blades arranged crosswise to the web
- B31F1/14B [N: Blade constructions]
- B31F1/16 by elastic belts [N: ([B31F1/18](#) takes precedence)]
- B31F1/18 by tools arranged in the direction of web feed; [N: Logitudinal crêping, i.e. providing paper with crêpes parallel to the direction of web movement, e.g. for making paper elastic transversely to this direction]

- B31F1/20 Corrugating; Corrugating combined with laminating to other paper or cardboard layers ([N: corrugating sheet metal [B21D13/00](#); corrugating plastics material [B29C53/22](#);] corrugating veneer [B27D](#))
- B31F1/20C [N: Corrugating tubes (corrugating tube ends [B31F1/00C8](#); Making tubes, not otherwise provided for, [B31F7/00C](#); Corrugating metal tubes [B21D15/00](#))]
- B31F1/22 Making webs in which the channel of each corrugation is longitudinal with the web feed
- B31F1/22B [N: combined with uniting the corrugated web to flat webs; Making corrugated-web structures]

- B31F1/24 . . Making webs in which the channel of each corrugation is transverse to the web feed
- B31F1/24C . . . [N: the corrugations being obliquely inclined to the web feed ([B31F1/24F](#), [B31F1/30](#) take precedence)]
- B31F1/24D . . . [N: by feeding the webs in a channel larger than the thickness of the webs by means of rollers, e.g. involving prefolding]
- B31F1/24F . . . [N: by reciprocating members]
- B31F1/26 . . . by interengaging toothed cylinders [N: cylinder constructions ([B31F1/24C](#) takes precedence)]
- B31F1/28 combined with uniting the corrugated webs to flat webs; [N: Making double-faced corrugated cardboard]
- B31F1/28B [N: Methods]
- B31F1/28B1 [N: characterised by the chemical composition of the glue]
- B31F1/28C [N: Making corrugated cardboard of composite structure, e.g. comprising two or more corrugated layers]
- B31F1/28D [N: Glue application specially adapted therefor]
- B31F1/28G [N: involving additional operations]
- B31F1/28G1 [N: Edge treatment]
- B31F1/28H [N: Control]
- B31F1/28H1 [N: Guiding, e.g. edge alignment; Tensioning]
- B31F1/28H2 [N: Warp prevention]
- B31F1/28J [N: Details, e.g. provisions for drying, moistening, pressing]
- B31F1/28J2 [N: Heating or drying equipment]
- B31F1/28J3 [N: Means for keeping the sheet in contact with one of the corrugating rollers after corrugating, but before applying the facer sheet, e.g. by air pressure, suction or pressing fingers]
- B31F1/28J3B {7 dots} [N: Pressing fingers]
- B31F1/28J4 [N: Corrugating cylinders; Supporting or positioning means therefor; Drives therefor]
- B31F1/28J4B {7 dots} [N: Exchangeable corrugating cylinders ([means for changing cutting members in shearing devices](#) [B23D35/00E](#))]
- B31F1/28J5 [N: Spraying devices, e.g. for moistening purposes; Lubricating devices]
- B31F1/28J6 [N: Pressing means for bringing facer sheet and corrugated webs into contact or keeping them in contact, e.g. rolls, belts]
- B31F1/28J6B {7 dots} [N: for bringing a second facer sheet into contact with an already single faced corrugated web] [N9904]
- B31F1/28K [N: Additionally reinforcing, e.g. by applying resin or wire]
- B31F1/28L [N: from discrete sheets]
- B31F1/28M [N: from corrugated webs having corrugations of particular shape]
- B31F1/29 by making use of rods, e.g. co-operating with a toothed cylinder [N: combined with uniting the corrugated web to flat webs ([B31F1/30](#) takes precedence)]
- B31F1/30 Tools secured to endless chains [N: e.g. toothed belts; combined with uniting the corrugated web to flat webs]
- B31F1/30B [N: with sets of interengaging tools each secured to endless chains]
- B31F1/32 . . Corrugating already corrugated webs
- B31F1/36 . Moistening and heating webs to facilitate mechanical deformation and drying

deformed webs[N: (during corrugating [B31F1/28](#))]

B31F5/00 **Attaching together paper or cardboard sheets, strips, or webs;**[N: or other preformed paper articles joining by rim-rolling[B31F1/00A5B](#),[B31F1/00C6B](#); closing tube ends by inserting an element[B31F1/00C4D](#), making boxes[B31B](#)]**Reinforcing edges of paper or cardboard**(means for applying adhesive or glue[B05C](#); stapling in box or like making[B31B](#); attaching the replacement web to the expiring web during web-roll changing[B65H19/18](#); apparatus for splicing webs during handling[B65H21/00](#))

- B31F5/00A . [N: by stapling or riveting]
- B31F5/00B . [N: by stitching]
- B31F5/00C . [N: by folding (rim-rolling [B31F1/00A5B](#))]
- B31F5/00D . [N: using a strip, e.g. profiled ([B31F5/06](#) takes precedence)]
- B31F5/00E . [N: by friction, e.g. obtained ultrasonic vibrations]
- B31F5/02 . by crimping or slotting [N: or perforating]
- B31F5/02B . . [N: using a rotary tool]
- B31F5/02C . . [N: by slotting]
- B31F5/02D . . [N: by perforating, e.g. by folding over the partially cut part]
- B31F5/04 . by exclusive use of adhesives
- B31F5/06 . by adhesive tape
- B31F5/08 . . for reinforcing edges; [N: Applying a strip or tape to an edge, e.g. for decorating, for protecting]
- B31F5/08B . . . [N: combined with folding the strip around the edge, or applying an already folded strip on (folding edges [B31F1/00A2B4](#), [B31F1/00A2B8C](#))]

B31F7/00 **Processes for working paper not otherwise provided for**

- B31F7/00B . [N: tubular articles, e.g. changing the cross-section]
- B31F7/00C . [N: Making tubes]
- B31F7/00D . [N: edges, e.g. sheet edges]
- B31F7/00R . [N: Repairing]
- B31F7/02 . Breaking the coating on paper