ECLA EUROPEAN CLASSIFICATION

B05D PROCESSES FOR APPLYING LIQUIDS OR OTHER FLUENT MATERIALS TO SURFACES, IN GENERAL (apparatus for applying liquids or other fluent materials to surfaces B05B, B05C; [N: coating of foodstuffs A23P1/08B12, A23P1/08B14])

Notes
This subclass covers:
- processes for applying liquids or other fluent materials to a surface or part of a surface, in general, by any mechanical or physical method and particularly processes producing a uniform distribution of liquids or other fluent materials on a surface;
- pretreatment of surfaces to which liquids or other fluent materials are to be applied;
- after-treatment of applied coatings. Attention is drawn to the Note following the title of class B05.

B05D1/00 **Processes for applying liquids or other fluent materials** (B05D5/00, B05D7/00 take precedence)

[N: **WARNING**
[N1112]Groups B05D1/60 to B05D1/62 do not correspond to former or current IPC groups. Concordance ECLA : IPC for those groups is as follows - B05D1/60 to B05D1/62 : B05D1/00, B05D7/00
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B05D1/00C . [N: the substrate being rotated]
B05D1/00C2 . . [N: Spin coating]

B05D1/00E . [N: using an electrostatic field (B05D1/02 to B05D1/16 take precedence)]

B05D1/02 . performed by spraying
B05D1/02C . . [N: using gas close to its critical state]
B05D1/04 . . involving the use of an electrostatic field [N: (B05D1/02C and B05D1/14 take precedence)]
B05D1/04C . . . [N: on non-conductive substrates]
B05D1/06 . . . Applying particulate materials
B05D1/08 . . Flame spraying
B05D1/10 . . . Applying particulate materials
B05D1/12 . . Applying particulate materials (B05D1/06, B05D1/10 take precedence)
B05D1/14 . . . Flocking

B05D1/16 . Flocking otherwise than by spraying

B05D1/18 . performed by dipping
B05D1/18C . . [N: applying monomolecular layers (B05D1/20C3 takes precedence)]
B05D1/20 . . substances to be applied floating on a fluid

B05D1/20C . . . [N: Langmuir Blodgett films (LB films)]
B05D1/20C3 . . . . [N: LB techniques]
B05D1/20C5 . . . . [N: LB troughs]
B05D1/20C7 . . . . [N: After-treatment of monomolecular films]
B05D1/22 . . using fluidised-bed technique (fluidised-bed technique in general B01J8/24)
B05D1/24 . . . Applying particulate materials

B05D1/26 . performed by applying the liquid or other fluent material from an outlet device in contact with, or almost in contact with, the surface
B05D1/26C . . [N: Extrusion coatings]

B05D1/28 . performed by transfer from the surfaces of elements carrying the liquid or other fluent material, e.g. brushes, pads, rollers
B05D1/28C . . [N: Transferring monomolecular layers or solutions of molecules adapted for forming monomolecular layers from carrying elements] [N9802]
B05D1/28E . . [N: using a temporary backing to which the coating has been applied]

B05D1/30 . performed by gravity only, i.e. flow coating
B05D1/30C . . [N: Curtain coating]

B05D1/32 . using means for protecting parts of a surface not to be coated, e.g. using stencils, resists
B05D1/32C . . [N: Removable films used as masks]
B05D1/32C3 . . . [N: Masking layer made of peelable film]
B05D1/32C5 . . . [N: Masking layer made of washable film]

B05D1/34 . Applying different liquids or other fluent materials simultaneously

B05D1/36 . Successively applying liquids or other fluent materials, e.g. without intermediate treatment
B05D1/38 . . with intermediate treatment (intermediate treatment per se B05D3/00)

B05D1/40 . Distributing applied liquids or other fluent materials by members moving relatively to surface
B05D1/42 . . by non-rotary members

B05D1/60 . [N: Deposition of organic layers from vapour phase (vapour phase deposition in general C23C14/00, C23C16/00)] [N1112]

B05D1/62 . [N: Plasma-deposition of organic layers (plasma deposition in general C23C14/00, C23C16/00)] [N1112]

B05D3/00 **Pretreatment of surfaces to which liquids or other fluent materials are to be applied; After-treatment of applied coatings, e.g. intermediate treating of an applied coating preparatory to subsequent applications of liquids or other fluent materials** (successively applying liquids or other fluent materials B05D1/36; drying ovens F26B)

[N: **WARNING**
[N1112] Groups B05D3/20 to B05D3/207 do not correspond to former or current IPC

groups. Concordance ECLA : IPC for those groups is as follows - B05D3/20-B05D3/207 : B05D3/00
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B05D3/00R . [N: Pretreatement]
B05D3/00R3 . . [N: Pretreatment for allowing a non-conductive substrate to be electrostatically coated]

B05D3/00S . [N: After-treatment]

B05D3/02 . by baking [N: (B05D3/04 takes precedence)]
B05D3/02H . . [N: Multistage baking]
B05D3/02R . . [N: Pretreatment, e.g. heating the substrate]
B05D3/02R3 . . . [N: with IR heaters]
B05D3/02R5 . . . [N: with ovens (B05D3/02R3 takes precedence)]
B05D3/02R7 . . . [N: with induction heating]
B05D3/02S . . [N: After-treatment]
B05D3/02S3 . . . [N: with IR heaters]
B05D3/02S5 . . . [N: with ovens]
B05D3/02S7 . . . [N: with induction heating]
B05D3/02S9 . . . [N: with microwaves]

B05D3/04 . by exposure to gases
B05D3/04C . . [N: the gas being air]
B05D3/04C3 . . . [N: Heating with air]
B05D3/04C5 . . . [N: Directing or stopping the fluid to be coated with air]
B05D3/04C7 . . . [N: Cooling with air]
B05D3/04E . . [N: the gas being a reactive gas]
B05D3/04E3 . . . [N: Pretreatment]
B05D3/04E3C . . . . [N: of a polymeric substrate]
B05D3/04E5 . . . [N: After-treatment]
B05D3/04E5C . . . . [N: Curing or evaporating the solvent]
B05D3/04N . . [N: the gas being a non-reacting gas (B05D3/04C takes precedence)]
B05D3/04N3 . . . [N: for heating, e.g. vapour heating]
B05D3/04N5 . . . [N: for cooling]
B05D3/04T . . [N: Operating the coating or treatment in a controlled atmosphere]
B05D3/04V . . [N: using vacuum]

B05D3/06 . by exposure to radiation (B05D3/02 takes precedence; [N: plasma treatment B05D3/14C])
B05D3/06C . . [N: using U.V.]
B05D3/06C3 . . . [N: Pretreatment]
B05D3/06C3C . . . . [N: of polymeric substrates (B05D3/06C3E takes precedence)]

B05D3/06C3E . . . . [N: involving also the use of a gas]
B05D3/06C5 . . . [N: After-treatment]
B05D3/06C5C . . . . [N: involving also the use of a gas]
B05D3/06C5E . . . . [N: Curing or cross-linking the coating]
B05D3/06E . . [N: using ionising radiations (gamma, X, electrons)]

B05D3/08 . by flames

B05D3/10 . by other chemical means
B05D3/10C . . [N: Pretreatment of polymeric substrate]
B05D3/10E . . [N: Pretreatment of metallic substrates (C23C takes precedence)]
B05D3/10G . . [N: Pretreatment of other substrates]
B05D3/10J . . [N: Intermediate treatments]
B05D3/10L . . [N: Post-treatment of applied coatings]
B05D3/10L3 . . . [N: Curing]

B05D3/12 . by mechanical means

B05D3/14 . by electrical means
B05D3/14C . . [N: Plasma treatment]
B05D3/14C3 . . . [N: Pretreatment]
B05D3/14C3C . . . . [N: of polymeric substrates]
B05D3/14C5 . . . [N: After-treatment]
B05D3/14C5C . . . . [N: Curing]
B05D3/14C5E . . . . [N: affecting the surface properties of the coating]

B05D3/20 . [N: by magnetic fields] [N1112]
B05D3/203 . . [N: pre-treatment by magnetic fields] [N1112]
B05D3/207 . . [N: post-treatment by magnetic fields] [N1112]

B05D5/00 **Processes for applying liquids or other fluent materials to surfaces to obtain special surface effects, finishes or structures**

B05D5/00C . [N: Repairing damaged coatings]

B05D5/02 . to obtain a matt or rough surface

B05D5/04 . to obtain a surface receptive to ink or other liquid (B05D5/02, [N: B41M5/00J] take precedence)

B05D5/06 . to obtain multicolour or other optical effects (B05D5/02 takes precedence)
B05D5/06E . . [N: Special surface effect]
B05D5/06E3 . . . [N: Wrinkled, cracked or ancient-looking effect]
B05D5/06E5 . . . [N: Reflective effect (B05D5/06T takes precedence)]
B05D5/06G . . [N: having colour interferences or colour shifts or opalescent looking, flip-flop, two tones]

B05D5/06G3 . . . [N: achieved by multilayers]
B05D5/06T . . [N: Metallic effect]
B05D5/06T3 . . . [N: achieved by multilayers (B05D5/06G3 takes precedence)]

B05D5/08 . to obtain an anti-friction or anti-adhesive surface (rendering particulate materials free-flowing in general, e.g. making them hydrophobic B01J2/30)
B05D5/08C . . [N: involving the use of fluoropolymers]
B05D5/08C3 . . . [N: having an anchoring layer]

B05D5/10 . to obtain an adhesive surface

B05D5/12 . to obtain a coating with specific electrical properties

B05D7/00 **Processes, other than flocking, specially adapted for applying liquids or other fluent materials to particular surfaces or for applying particular liquids or other fluent materials** [N: (coating of foodstuffs A23P1/08B12, A23P1/08B14)]

[N: **WARNING**
[N1112] Groups B05D7/50 to B05D7/53E8E3 do not correspond to former or current IPC groups. Concordance ECLA : IPC for those groups is as follows - B05D7/50 to B05D7/5885 : B05D7/00
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B05D7/02 . to macromolecular substances, e.g. rubber (treatment or coating of shaped articles made of macromolecular substances C08J7/00)
B05D7/04 . . to surfaces of films or sheets (producing layered products by applying coatings of pasty or pulverulent plastics B29C41/00) [C1111]

B05D7/06 . to wood
B05D7/08 . . using synthetic lacquers or varnishes
B05D7/10 . . . based on cellulose derivatives

B05D7/12 . to leather (chemical treatment of leather C14C; dyeing leather D06P)

B05D7/14 . to metal, e.g. car bodies (involving a chemical reaction between the metal and the coating C23)
B05D7/14C . . [N: Auto-deposited coatings, i.e. autophoretic coatings]
B05D7/14C3 . . . [N: After-treatment of auto-deposited coatings]
B05D7/14E . . [N: to metallic pipes or tubes (processes for coating the interior of pipes B05D7/22A)]
B05D7/14G . . [N: using epoxy-polyolefin systems in mono- or multilayers] [N9505]
B05D7/16 . . using synthetic lacquers or varnishes
B05D7/18 . . . based on cellulose derivatives

B05D7/20 . to wires (for insulating electric cables H01B13/16)

B05D7/22 . to internal surfaces, e.g. of tubes
B05D7/22A . . [N: of pipes]
B05D7/22A5 . . . [N: Laminating inside the pipe]

B05D7/22C . . [N: of containers, cans or the like]

B05D7/24 . for applying particular liquids or other fluent materials

B05D7/26 . . synthetic lacquers or varnishes (B05D7/08, B05D7/16 take precedence)

B05D7/50 . [N: Multilayers] [N1112]

[N: **Notes**
[N1112] A possible inorganic pretreatment or coating on the substrate such as chromatation, phosphatation, plating, is not counted as a layer. This group covers mostly multilayers characterised by each layer and the succession of them (laminates in general B32B)
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B05D7/51 . . [N: One specific pretreatment, e.g. phosphatation, chromatation, in combination with one specific coating (pretreatment of metallic substrates C23C; pretreatment before coating in general B05D3/00)] [N1112]

B05D7/52 . . [N: Two layers] [N1112]

B05D7/53 . . . [N: Base coat plus clear coat type] [N1112] [C1207]

B05D7/532 . . . . [N: the two layers being cured or baked together, i.e. wet on wet] [N1112]

B05D7/5323 . . . . . [N: the two layers being applied simultaneously] [N1112]

B05D7/534 . . . . [N: the first layer being let to dry at least partially before applying the second layer (B05D7/538 takes precedence)] [N1112]

B05D7/536 . . . . [N: each layer being cured, at least partially, separately] [N1112]

B05D7/538 . . . . [N: No curing step for the last layer] [N1112]

B05D7/5383 . . . . . [N: No curing step for any layer] [N1112]

B05D7/5385 . . . . . [N: the two layers being applied simultaneously] [N1112]

B05D7/54 . . . [N: No clear coat specified] [N1112]

B05D7/542 . . . . [N: the two layers being cured or baked together] [N1112]

B05D7/5423 . . . . . [N: the two layers being applied simultaneously] [N1112]

B05D7/544 . . . . [N: the first layer is let to dry at least partially before applying the second layer] [N1112]

B05D7/546 . . . . [N: each layer being cured, at least partially, separately] [N1112]

B05D7/548 . . . . [N: No curing step for the last layer] [N1112]

B05D7/5483 . . . . . [N: No curing step for any layer] [N1112]

B05D7/5485 . . . . . [N: the two layers being applied simultaneously] [N1112]

B05D7/56 . . [N: Three layers or more] [N1112]

B05D7/57 . . . [N: the last layer being a clear coat] [N1112]

B05D7/572 . . . . [N: all layers being cured or baked together] [N1112]

B05D7/5723 . . . . . [N: all layers being applied simultaneously] [N1112]

B05D7/574 . . . . [N: at least some layers being let to dry at least partially before applying the next layer (B05D7/577 takes precedence)] [N1112]

B05D7/576 . . . . [N: each layer being cured, at least partially, separately] [N1112]

B05D7/577 . . . . [N: some layers being coated "wet-on-wet", the others not] [N1112]

B05D7/578 . . . . [N: No curing step for the last layer] [N1112]

B05D7/5783 . . . . . [N: No curing step for any layer] [N1112]

B05D7/5785 . . . . . [N: all layers being applied simultaneously] [N1112]

B05D7/58 . . . [N: No clear coat specified] [N1112]

B05D7/582 . . . . [N: all layers being cured or baked together] [N1112]

B05D7/5823 . . . . . [N: all layers being applied simultaneously] [N1112]

B05D7/584 . . . . [N: at least some layers being let to dry, at least partially, before applying the next layer (B05D7/587 takes precedence)] [N1112]

B05D7/586 . . . . [N: each layer being cured, at least partially, separately] [N1112]

B05D7/587 . . . . [N: some layers being coated "wet-on-wet", the others not] [N1112]

B05D7/588 . . . . [N: No curing step for the last layer] [N1112]

B05D7/5883 . . . . . [N: No curing step for any layer] [N1112]

B05D7/5885 . . . . . [N: all layers being applied simultaneously] [N1112]