

C03B

MANUFACTURE, SHAPING, OR SUPPLEMENTARY PROCESSES

Relationships with other classification places

[C03B](#) concerns all aspects of glass manufacture processes, apparatus and [C03C](#) relates to the glass chemistry, such as composition, additives, chemical treatment.

[C04B](#) relates to ceramics having a crystallographic structure different from the glass compounds. For composites containing glass and ceramic, composites comprising more than 50% of glass are classified in [C03C](#).

References

Limiting references

This place does not cover:

Preparation of finely divided silica	C01B 33/18
Changing the surface of the glass ribbon by chemical methods	C03C
Chemical aspects of glass	C03C
Refining agents	C03C 1/00
Chemical aspects of hollow, porous, sintered or foamed beads	C03C 11/00
Beads composition	C03C 12/00
Surface treatment of glass by coating with glass	C03C 17/02
Surface treatment of fibres or filaments from glass, minerals or wools, sizing of the fibres	C03C 25/00
Coating of the fibre during the drawing process	C03C 25/10
Optical fibres per se with polarisation maintaining properties in light guides	G02B 6/024
Cutting or severing of light guides	G02B 6/25
Fusion-splicing of light guides	G02B 6/255
Treatment of light guides to shape optical elements	G02B 6/287

Informative references

Attention is drawn to the following places, which may be of interest for search:

Syringes	A61M 5/178
Devices for reactant delivery in general	B01J 4/00
Containers or dishes for laboratory use, e.g. laboratory glassware	B01L 3/00
Nozzles	B05B
Disposal or transformation of solid waste in general	B09B
Machines or processes for grinding or polishing glass	B24B 7/24
Molding plastics around a core using a cross-head annular extrusion nozzle	B29C 47/28
Extrusion presses in general	B30B 11/22
Windows, windscreens for vehicles	B60J 1/00

Windows, doors for airplanes	B64C 1/14
Glass containers, e.g. bottles, ampoules, jars	B65D 1/00
Conveying systems for fragile sheets, e.g. glass	B65G 49/06
Hand tools for cutting ampoules	B67B 7/92
Crucibles for supporting the melt	C30B 15/10
Bi-component fibres	D01F 8/00
Yarns or threads made from glass	D02G 3/18
Woven fabrics	D03D 15/00
Non-woven fabrics	D04H 13/00
Building elements of glass or other transparent material	E04C 1/42
Doors, windows	E06
Thermal insulation arrangements using fillers, e.g. slag wool	F16L 59/04
Globes, bowls, cover glasses	F21V 3/00
Brick shapes in general	F27D 1/04
Optical glass, lens	G02B 1/00
Programme-control system	G05B 19/00
Treatment of radioactive waste	G21F 9/00
Apparatus specially adapted for the manufacture of electric discharge tubes, discharge lamps	H01J 9/00

Special rules of classification

The IPC group **C03B8/00** is not used in CPC. Depending on the process used, production of glass may be classified in the following CPC groups:

C03B8/00 is classified in [C03B 19/00](#), [C03B 37/00](#)

C03B8/02 is classified in [C03B 19/1065](#), [C03B 19/12](#), [C03B 37/011](#), [C03B 37/016](#)

C03B8/04 is classified in [C03B 19/106](#), [C03B 19/14](#), [C03B 37/014](#)

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Annealing	Process of slowly cooling glass to relieve internal stresses after it was formed
Cullet	Scraps of broken or waste glass for remelting
Debiteuse	Clay block floating upon molten glass in a tank furnace and containing a long slot that shapes glass into a sheet as it is drawn through it
Gob	Lump of molten glass used to make a piece of glassware
Mineral wool	Inorganic fibrous material made from molten glass
Slag wool	Mineral wool made from blast-furnace slag
Tempering	Process of heating glass above its annealing point and then rapidly cooling it.

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

Mineral wool, slag wool	Rock wool
Tempered	Toughened

C03B 1/00

Preparing the batches (chemical compositions [C03C](#))

Definition statement

This place covers:

Preparation of raw mixtures used in manufacturing glass, mineral or slag wool (batches), e.g. mixing, pelletizing

Relationships with other classification places

The chemical composition of the batch is classed in [C03C 1/00](#).

References

Limiting references

This place does not cover:

Chemical compositions	C03C
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C03B 3/00

Charging the melting furnaces

Definition statement

This place covers:

Processes and devices concerning the addition of glass-making ingredients into the melting furnaces

C03B 5/00

Melting in furnaces; Furnaces so far as specially adapted for glass manufacture

Definition statement

This place covers:

- Melting processes of glass-making ingredients in furnaces
- Furnaces used for glass manufacture

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mixing	B01F
Burners	F23D

Furnaces	F27
Electrical heating	H05B

Special rules of classification

Heating processes to be classified in [C03B 2211/00](#)

C03B 5/005

{of glass-forming waste materials (disposal or transformation of solid waste in general [B09B](#); treatment of radioactive waste [G21F 9/00](#))}

Definition statement

This place covers:

Waste materials melted in furnaces to form glass, e.g. recycling of glass to produce new glass

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Disposal of solid waste	B09B
Treatment of radioactive waste	G21F 9/00

C03B 7/00

Distributors for the molten glass; Means for taking-off charges of molten glass; Producing the gob{, e.g. controlling the gob shape, weight or delivery tact}

Definition statement

This place covers:

- Means for taking off charges of molten glass
- Forehearths, i.e. feeder channels
- Feeder spouts, e.g. gob feeders, pneumatic feeders, spout blocks
- Suction, scoop feeders

C03B 9/00

Blowing glass; Production of hollow glass articles

Definition statement

This place covers:

Shaping of glass by blowing processes with production of hollow glass articles:

- with blow pipes, in gob feeder machines, in I.S. machines (individual section machines), past mould machines, moulds, blow heads

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Valves	F16K
Control systems	G05B or G05D

C03B 11/00

Pressing {molten} glass {or performed glass reheated to equivalent low viscosity without blowing (shaping molten glass by a press-blow process [C03B 9/00](#), e.g. [C03B 9/193](#); re-forming shaped glass [C03B 23/00](#); re-heating the performed glass [C03B 29/00](#); transporting the performed or pressed glass during its manufacture [C03B 35/00](#))}

References

Limiting references

This place does not cover:

Shaping molten glass by a press-blow process	C03B 9/00
Re-forming shaped glass	C03B 23/00
Re-heating the preformed glass	C03B 29/00
Transporting the preformed or pressed glass during its manufacture	C03B 35/00

Special rules of classification

Material and mould characteristics to be also classed in [C03B 2215/00](#)

C03B 13/00

Rolling {molten} glass{, i.e. where the molten glass is shaped by rolling (re-forming shaped glass by rolling [C03B 23/004](#), [C03B 23/033](#), [C03B 23/055](#))}

Definition statement

This place covers:

- Rolling of profiled glass articles, patterned and non-patterned sheets, corrugated sheets
- Construction of glass rollers
- Auxiliary means for rolling glass, e.g gripping devices, sheet supports, roller beds for the rolled plate glass

References

Limiting references

This place does not cover:

re-forming shaped glass by rolling	C03B 23/004 , C03B 23/033 , C03B 23/055
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C03B 15/00**Drawing glass upwardly from the melt****Definition statement**

This place covers:

Drawing glass upwardly from the melt processes with production of drawing glass sheets, tubes, cylinders

C03B 17/00**Forming {molten} glass by flowing-out, pushing-out, {extruding} or drawing downwardly or laterally from forming slits or by overflowing over lips****Definition statement**

This place covers:

Forming glass processes by flowing out with formation of glass coated with coloured layers, formation of tubes, glass sheets

C03B 18/00**Shaping glass in contact with the surface of a liquid****Definition statement**

This place covers:

Shaping glass processes in contact with the surface of a liquid, i.e. float bath, with formation of sheets

C03B 19/00**Other methods of shaping glass (manufacture or treatment of flakes, fibres or filaments from softened glass, minerals or slags [C03B 37/00](#))****References****Limiting references**

This place does not cover:

Manufacture or treatment of flakes, fibres or filaments from softened glass, minerals or slags	C03B 37/00
Crucibles for supporting the melt in single-crystal growth by pulling from a melt; crucibles for the production of after treatment of single crystals	C30B 15/10 , C30B 35/002

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mold made of carbon ceramic	C04B 35/52
Carbon electrodes	H05B 7/085

Special rules of classification

Glass characteristics to be also classed in [C03B 2201/00](#)

Glass deposition burners to be also classed in [C03B 2207/00](#)

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Liquid phase reaction	Sol-gel process
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C03B 20/00

Processes specially adapted for the production of quartz or fused silica articles{, not otherwise provided for ([C03B 19/01](#), [C03B 19/066](#), [C03B 19/106](#), [C03B 19/12](#), [C03B 19/14](#), [C03B 37/00](#) take precedence)}

References

Limiting references

This place does not cover:

Shaping glass by progressive fusion of powdered glass	C03B 19/01
Shaping glass by sintering for the production of quartz or fused silica articles	C03B 19/066
Forming solid beads by chemical vapour deposition	C03B 19/106
Shaping glass by liquid-phase reaction	C03B 19/12
Shaping glass by gas or vapour phase reaction processes	C03B 19/14
Manufacture or treatment of flakes, fibres or filaments from softened glass, minerals or slags	C03B 37/00

C03B 21/00

Severing glass sheets, tubes or rods while still plastic

Definition statement

This place covers:

The cutting, the punching out, the burning-off, of glass which is in a plastic state, meaning its temperature is around softening point. There is no material ablation

C03B 23/00

Re-forming shaped glass (re-forming fibres or filaments [C03B 37/14](#))

Definition statement

This place covers:

The re-forming of shaped glass which has already been formed such as by pressing, centrifuging, rolling, bending, blowing, etc.

References

Limiting references

This place does not cover:

Re-forming fibres or filaments	C03B 37/14
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Uniting glass pieces with the addition of material	C03C 27/00
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Special rules of classification

[C03B 23/20](#) only concerns uniting glass without any material addition and/or reshaping.

Fabrics, felts or loose covers for preventing direct contact between the hot glass and means used to shape it are classed in [C03B 40/005](#)

Details of transporting means are also classified in [C03B 2225/00](#)

C03B 25/00

Annealing glass products

Definition statement

This place covers:

The annealing of glass products in discontinuous or continuous way

C03B 27/00

Tempering {or quenching} glass products

Definition statement

This place covers:

Tempering by using heat of sublimation of solid particles, by heat treatment, by absorbing heat radiated from the glass product, using liquid or gas

C03B 27/012

by heat treatment, e.g. for crystallisation; Heat treatment of glass products before tempering by cooling ([C03B 27/008](#), [C03B 27/016](#) take precedence)

References

Limiting references

This place does not cover:

Tempering by using heat of sublimation of solid particles	C03B 27/008
Tempering by absorbing heat radiated from the glass product	C03B 27/016
Treatment of glass by performing ion exchange between alkali ions (chemical strengthening of glass)	C03C 21/002

C03B 29/00

Reheating glass products for softening or fusing their surfaces; Fire-polishing; Fusing of margins

Definition statement

This place covers:

Glass heating furnaces for reheating glass products in a discontinuous way or continuous way for softening or fusing their surfaces; for fire-polishing

References

Limiting references

This place does not cover:

Furnaces	F27
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C03B 32/00

Thermal after-treatment of glass products not provided for in groups {[C03B 19/00](#)}, [C03B 25/00](#) - [C03B 31/00](#) {or [C03B 37/00](#)}, e.g. crystallisation, eliminating gas inclusions or other impurities; {Hot-pressing vitrified, non-porous, shaped glass products}

References

Limiting references

This place does not cover:

Methods of shaping glass	C03B 19/00
Annealing glass products	C03B 25/00
Tempering or quenching glass products	C03B 27/00
Reheating glass products for softening or fusing their surface	C03B 29/00
Manufacture of rippled or cracked glass	C03B 31/00
Manufacture or treatment of flakes, fibres, or filaments from softened glass, minerals or slags	C03B 37/00

C03B 33/00

Severing cooled glass (severing glass fibres [C03B 37/16](#))

Definition statement

This place covers:

The "traditional" cutting of glass, meaning "without ablation of material"

Relationships with other classification places

Making a hole in cold glass sheet with material ablation is classified in [B62D](#)

Punching, embossing, making hole while glass is in plastic state ("hot" glass) with no material ablation is classified in [C03B 21/00](#)

References

Limiting references

This place does not cover:

Severing glass fibres	C03B 37/16
Boring of glass	B26D
Sawing glass (e.g. cutting glass by ablation)	B26D

C03B 33/0222**{Scoring using a focussed radiation beam, e.g. laser}****References****Limiting references***This place does not cover:*

Severing cooled glass by fusing , using a focussed radiation beam, e.g. laser beam	C03B 33/082
Tubes, rod or hollows glass products obtained by fusing cooled glass, using a focussed radiation beam, e.g. laser beam	C03B 33/0855
Severing cooled glass by thermal shock using a focussed radiation beam, e.g. laser beam	C03B 33/091 , C03B 33/093
Tubes, rod or hollows glass products obtained by thermal shock of cooled glass, using a focussed radiation beam, e.g. laser	C03B 33/0955

C03B 33/102**{involving a focussed radiation beam, e.g. lasers}****References****Limiting references***This place does not cover:*

Severing cooled glass by fusing, using a focussed radiation beam, e.g. laser beam	C03B 33/082
Tubes, rod or hollows glass products obtained by fusing cooled glass, using a focussed radiation beam, e.g. laser beam	C03B 33/0855
Severing cooled glass by thermal shock using a focussed radiation beam, e.g. laser beam	C03B 33/091 , C03B 33/093
Tubes, rod or hollows glass products obtained by thermal shock of cooled glass, using a focussed radiation beam, e.g. laser	C03B 33/0955

Special rules of classification

Groups [C03B 33/082](#), [C03B 33/0855](#), [C03B 33/091](#), [C03B 33/093](#) and [C03B 33/0955](#) take precedence over [C03B 33/102](#).

Lasers beam as such are classified in [B23K 26/00](#).

C03B 35/00

Transporting of glass products during their manufacture, {e.g. hot glass lenses, prisms} (conveying systems for fragile sheets, e.g. glass [B65G 49/06](#))

Definition statement*This place covers:*

The transport of glass during its manufacture ([C03B](#) processes), meaning that the glass is hot.

References

Limiting references

This place does not cover:

Conveying systems for transport of cold glass sheets e.g. glass	B65G 49/06
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Special rules of classification

Details of transporting means are also classified in [C03B 2225/00](#)

C03B 37/00

Manufacture or treatment of flakes, fibres, or filaments from softened glass, minerals, or slags

Definition statement

This place covers:

- Manufacture of flakes
- Manufacture of glass fibres or filaments by e.g. manufacture of preforms for drawing fibres or filaments, by drawing or extruding, by using centrifugal force, by blasting molten glass

Special rules of classification

Material characteristics to be also classed in [C03B 2201/00](#)

Fibre characteristics to be also classed in [C03B 2203/00](#)

Deposition burners to be also classed in [C03B 2207/00](#)

Fibre drawing characteristics to be also classed in [C03B 2205/00](#)

C03B 40/00

Preventing adhesion between glass and glass or between glass and the means used to shape it{, hold it or support it}

Special rules of classification

This group is only used if not already in [C03B](#)