

10 Fuels

10a	Coking, low-temperature carbonisation, carbonisation
10b	Manufacture of fuel briquettes, igniters and the like, solidification of liquid fuels
10c	Extraction of peat, processing of peat into fuel

10a	Coking, low-temperature carbonisation, carbonisation
	Coke ovens (retorts 26a-6 – 26a-8, 26a-13 – 26a-17)
10a-1/01	Coke ovens with vertical chambers (24c-8; 26a-8)
10a-1/02	Coke ovens with vertical chambers and heat exchangers
10a-2	Beehive coke ovens
10a-3	Coke ovens with horizontal chambers, general arrangements (design of heating flue system 10a-6 – 10a-8)
	Coke oven with horizontal chambers and heat exchangers (24c-5; 24c-6)
10a-4/01	with regenerators mounted in the same direction as the chambers
10a-4/05	with regenerators mounted in the same direction as the bench
10a-4/10	Uniflow regenerator coke ovens
10a-4/15	Coke ovens with recuperators
10a-4/20	Checkerwork for heat exchangers in coke ovens
10a-5/01	Feeding of heating gases and combustion air to coke ovens, general arrangements
10a-5/02	Top feeding of heating gases and combustion air to vertical heating flues
10a-5/03	Top and bottom feeding of gas and air from vertical heating flues
10a-5/04	Multistage feeding of gas and /or air to the flues
10a-5/10	Reintroduction of waste gases, ovens with recirculating heating systems
10a-5/15	Burner structures, nozzles (24c-10)
10a-5/20	Draft reversing devices and reversing machine for regenerator coke ovens (24c-7)
10a-6	Heating flue systems for coke ovens with horizontal chambers and vertical flues
10a-7	Heating flue systems for coke ovens with horizontal chambers and horizontal flues
10a-8	Heating flue systems for coke ovens with horizontal chambers and both horizontal and vertical flues
10a-9	Continuous coke ovens (with vertical chambers 10a-1)
10a-10/01	Miscellaneous coke oven structures (80c)
10a-10/02	Coke ovens with inclined chambers (26a-7)
10a-10/03	Bottom-heated coke ovens
	Auxiliary apparatus for coke ovens
10a-11/01	Charging equipment for coking chambers, general (24e-9; 26e-1 – 26e-4)
10a-11/05	Charging cars
10a-11/10	Side charging with compressed coal cakes
10a-11/11	Side charging with uncompressed coal cakes
10a-12/01	Doors and closures for horizontal coking chambers (24k-1; 26a-14; 36a-15)
10a-12/02	Doors and closures for inclined chamber ovens
10a-12/03	Doors and closures for coking ovens with vertical chambers
10a-12/04	Devices for opening and closing retort doors
10a-12/10	Charging-hole closure
10a-13	Details of coking ovens: brick shapes and the like
10a-14	Coal stamping and pressing equipment, including auxiliary equipment

- 10a-15 Devices for mechanically handling coal charges in retorts: levelling, compacting, production of cavities in chamber charges, etc.
- 10a-16/01 Coke pushing and extracting equipment, including accessories (26e-4 – 26e-6)
- 10a-16/02 Discharging equipment for coke ovens with vertical chambers (26a-8/02; 26e)
- Auxiliary coking plant apparatus**
- 10a-17/01 Wet quenching of coke
- 10a-17/02 Drag chutes for conveying and quenching coke
- 10a-17/03 Quenching towers and pits, immersion processes
- 10a-17/04 Dry coke cooling
- 10a-17/05 Coke classification, only in connection with coke discharging and quenching
- 10a-17/06 Quenching of coke with small quantities of steam
- 10a-17/07 Quenching of coke within the coke oven
- 10a-17/08 Coke bench structures
- 10a-17/09 Quenching of coke by means of rotating tables, drums, bucket wheels
- 10a-17/10 Coke conveyors in connection with quenching equipment (81e-109) and other accessories such as signalling and control devices for coke pushers
- 10a-17/11 Auxiliary apparatus for coking in general
- Pretreatment of material to be gasified before charging into the oven, e.g. by means of additives (18a-2; by stamping and pressing 10a-14), and subsequent desulphurising treatment of coke
- 10a-18/01 Addition of organic or inorganic substances (26a-4)
- 10a-18/02 Mixing of different coal types, constituents or the like, and equipment therefor (mixing of dry material, general, 50f)
- 10a-18/03 Desulphurisation of coke by means of additives, before coking
- 10a-18/04 Desulphurisation of coke after coking
- 10a-18/05 Miscellaneous pretreatment of degasification material
- Recovery, discharging and conveying of distillation and charging gases**
- 10a-19/01 Recovery and discharge of distillation gases (12e-2; 18a-8/01; 18a-5/06; 26d-1/01 – 26d-1/40; 26d-5; 40a-17; 40a-7/02; vertical tubes 26a-15; receivers 26a-16)
- 10a-19/02 Recovery and discharge of distillation gases along the height of the coke oven
- 10a-19/03 Discharge of charging gases
- 10a-20 General characteristics of oven gas pipes, e.g. pressure regulation in the pipe, cleaning of pipes, waste heat recovery, etc. (24g; 26a-15 – 26a-17; gas pressure regulators, general, 42q)
- Coking processes**
- 10a-21 Coking by passing hot gases through material being coked (10a-24/01 – 10a-24/07; 26a-2; 26a-11)
- 10a-22/01 Multistage coking (multistage low-temperature carbonisation 10a-36)
- 10a-22/02 Pre-drying prior to coking (pre-drying prior to low-temperature carbonisation 10a-36/02)
- 10a-22/03 Heating methods (26a-1/02)
- 10a-22/04 Addition of tar or the like, of water or water vapours (26a-2)
- 10a-22/05 Coking of tar, pitch or the like
- 10a-22/06 Testing procedures and equipment for coking
- 10a-22/07 Coking methods, when not included in groups 10a-22/01 – 10a-22/06)
- Methods for low-temperature carbonisation and carbonisation, low-temperature carbonisation ovens, low-temperature coking**
- 10a-23 Low-temperature carbonisation only in externally heated shaft ovens with indirect heating of the material

- 10a-24/01 Low-temperature carbonisation in shaft furnaces, where the heating agent is passed through the material in the form of scavenging gas, with direct heating of the material (10a-21, 26a-2)
- 10a-24/02 Low-temperature carbonisation with steam
- 10a-24/03 Low-temperature carbonisation with combustible gases
- 10a-24/04 Low-temperature carbonisation with preheated solid materials, contact low-temperature carbonisation
- 10a-24/05 Low-temperature carbonisation with simultaneous direct and indirect heating of the material
- 10a-24/06 Low-temperature carbonisation and drying columns
- 10a-24/07 Separation of dust from low-temperature carbonisation or scavenging gases
- 10a-25 Low-temperature carbonisation with internal heating elements
- 10a-26/01 Low-temperature carbonisation and carbonisation in rotating drums (40a-5; 80c-14/01; 82a-19)
- 10a-26/02 in vertical rotary ovens
- 10a-26/03 in rotary ovens with disk-shaped chambers
- 10a-27/01 Low-temperature carbonisation and carbonisation, the material being conveyed by worm conveyors through the low-temperature carbonisation or carbonisation chamber (82a-20)
- 10a-27/02 Low-temperature carbonisation and carbonisation, the material being conveyed through the low-temperature carbonisation or carbonisation chamber by means of buckets, agitators or the like
- 10a-28 Low-temperature carbonisation and carbonisation in tunnel ovens
- 10a-29 Low-temperature carbonisation and carbonisation on endless conveying equipment, e.g. endless belts, bucket conveyors, drums, or the like, with the exception of rotary hearths (82a)
- 10a-30 Low-temperature carbonisation and carbonisation in rotary-hearth kilns and mechanical multistage ovens (82a)
- 10a-31 Low-temperature carbonisation and carbonisation on heating surfaces on which the material is mechanically moved, such as shaking platforms, shaking grates, oscillating furnaces, etc. , with the exception of rotary-hearth kilns and mechanical multistage furnaces
- 10a-32/01 Low-temperature carbonisation and carbonisation in hot, molten baths
- 10a-32/02 Low-temperature carbonisation and carbonisation by direct contact with molten metal
- 10a-33/01 Low-temperature carbonisation and carbonisation, particularly of pulverised or fine-grained fuel, the material being mechanically conveyed through the low-temperature carbonisation or carbonisation chambers, by means other than described in 10a-26/01 – 10a-32/02, e.g. by centrifuging or blowing
- 10a-33/02 Low-temperature carbonisation and carbonisation in a gas stream
- 10a-34 Low-temperature carbonisation and carbonisation in retorts without internal heating elements
- 10a-35 Low-temperature carbonisation and carbonisation associated with mechanical pressing of the material
- 10a-36/01 Low-temperature carbonisation and carbonisation processes, ovens and accessories when not included in 10a-23 – 10a-35
- 10a-36/02 with special pre-drying of the material (pre-drying before carbonisation 10a-22)
- 10a-36/03 Bench arrangement of low-temperature carbonisation and carbonisation chambers
- 10a-36/04 Conveying of the material from the lower to the upper part of the oven
- 10a-36/05 with utilisation of the exothermic reaction
- 10a-36/06 with utilisation of special heating methods
- 10a-36/07 with control of the heating gas temperatures
- 10a-36/08 with utilisation of electrical energy hearth
- 10a-36/09 with utilisation of rotary-hearth furnaces
- 10a-36/10 with utilisation of multiple stages besides pre-drying

- 10a-36/12 Special carbonisation processes and ovens
- 10a-37 Low-temperature carbonisation of bituminous rocks, when not included in 10a-23 – 10a-35 (underground gasification 26a-9)
- 10a-38/01 Carbonisation processes and ovens for wood and peat, when not included in 10a-23 – 10a-35, excluding charcoal kilns
- 10a-38/02 Special peat carbonisation processes and ovens
- 10a-39 Charring processes and kilns
- 10b Manufacture of fuel briquettes (briquette presses 80a), igniters [kindling] and the like, solidification of liquid fuels (23c), fuel refining**
- 10b-1 Briquetting without binders
- 10b-2 Briquetting with inorganic binders
- Briquetting with organic binders
- 10b-3/03 with peat, manufacture of peat briquettes with binders (peat briquettes without binders 10c-8)
- 10b-3/02 with naphthalene
- 10b-3/03 with tar and the like
- 10b-3/04 with miscellaneous organic binders, e.g. resins
- 10b-4/01 Briquetting with mixtures of inorganic and organic binders (10b-16/01 – 10b-16/07)
- 10b-4/02 with sulphite cellulose waste liquor
- Preparation and pretreatment of binders for briquetting (22h)
- 10b-5/01 from tar, pitch, hydrocarbons (pitch comminuting process 50c-17/40)
- 10b-5/02 from vegetable matter, starch and the like
- 10b-5/03 from cellulose, cellulose waste liquor, paper, etc.
- 10b-5/04 from other starting materials
- Special briquette types; special layer arrangements or special shapes; coatings for briquettes
- 10b-6/01 Shaping (81a-10)
- 10b-6/02 Coatings
- 10b-6/03 Briquettes with igniting substances [incorporated], continued-combustion aids
- 10b-7 Process for mixing briquette materials, with binders (12e-4; 50f; 80a-7), pitch boilers, distribution of the liquid binder throughout the mass of the briquette (tar boiler 22h-7)
- 10b-8 Improvement of fuel: impregnation with petroleum oil vapours (1c-3), addition of oxygen-containing substances to briquettes, or incandescent substances, formation of protective coatings on coal fines, additives for briquettes to prevent smoke and neutralise the effect of sulphur (10a-18)
- 10b-9/01 Briquetting, general (ore briquettes 18a-2)
- 10b-9/02 Cooling of briquettes
- 10b-9/03 Heating of briquettes, coking of binders
- 10b-9/04 Subsequent drying and cooling of the starting fuel (drying 82a)
- 10b-9/05 pressing processes (briquette presses 80a-25)
- 10b-9/06 Dust removal during briquetting (12e-2; 12e-5; 50e), safety devices against explosions
- 10b-9/07 Coal preparation by mechanical methods, extraction and dehumidification processes
- 10b-10 Spraying agents and the like for preventing smoke in furnaces, oxygen-containing additives
- 10b-11/01 Solidification of liquid fuels for the manufacture of igniters [kindlings] briquettes, etc.
- 10b-11/02 Solidification of petroleum (23c-3)
- 10b-11/03 Solidification of alcohol
- 10b-12 Combustible igniters, as to composition
- 10b-13/01 Special fire kindling shapes (10b-6; 10b-14)
- 10b-13/02 Kindling with igniting tips

- 10b-14 Devices for the manufacture and impregnation of fire kindling (10b-15)
- 10b-15 Incombustible porous bodies for the absorption of liquid fuels and accessories,
incombustible igniters (24k-6; 34d-7)
- Conversion of various materials of various types into liquid fuel (1a-40; 23c-1)
- 10b-16/01 Fuel waste and residues
- 10b-16/02 Waste from wood, timber, and plants
- 10b-16/03 Household refuse, street rubbish, barn waste
- 10b-16/04 Foecalia, sewage and the like
- 10b-16/05 Brewery waste, waste from cellulose and sugar plants
- 10b-16/06 Miscellaneous waste
- 10b-16/07 Chemical waste
- 10c** **Extraction of peat, processing of peat into fuel** (peat degasification
and low-temperature carbonisation 10a; peat drying 82a)
- 10c-1 Extraction of peat, general, peat excavators (5b-28 – 5b-32; 5b-41/01; clay extraction
80a-1; excavators, general 84d)
- 10c-2 Natural-peat extraction by cutting and ploughing; natural-peat dividing, depositing,
turning over, collecting and conveying (80a-1/01; 80a-35 – 80a-42; 81e)
- 10c-3 Cutting of the spread peat
- 10c-4 Processing of natural peat in special machines into solid sticks, or pulp (for clay 80a-2;
sod cutters 10c-2)
- 10c-5 Devices for finely dividing peat in peat blocks, litter, powder and the like, except peat
machines proper (peat fertilisers 16; peat fibres 29a-5; 29b-2; 76b-2/01; peat for
fodder 53g; peat for paper manufacture 55a-4; peat blocks for building purposes,
insulation and the like 80b-9/04); structural elements from peat 37)
- 10c-6 Water removal from peat mass, general, also manufacture of peat coal from wet peat
in a single operation, also electrical water removal from peat; peat electro-osmosis
(water removal from peat deposits 10c-1; 10a-23 – 10a-35; 10a-38; 12d-1; 82a-1/20,
82a-24)
- 10c-7 Water removal from peat by means of presses, rolls, centrifuges, belts (1a-18; 12d -
12g; 58a; 58b; 82b)
- 10c-8 Open-air drying of extracted peat and preparation of pressed peat without foreign
binders (with foreign binders 10b-2 – 10b-9; briquette presses 80a-25)
- 10c-9 Miscellaneous processes and installations for processing peat into fuel