

## SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

### F24 HEATING; RANGES; VENTILATING

**F24D DOMESTIC- OR SPACE-HEATING SYSTEMS, e.g. CENTRAL HEATING SYSTEMS; DOMESTIC HOT-WATER SUPPLY SYSTEMS; ELEMENTS OR COMPONENTS THEREFOR** (preventing corrosion C23F; water supply in general E03; using steam or condensate extracted or exhausted from steam engine plants for heating purposes F01K 17/02; steam traps F16T; domestic stoves or ranges F24B, F24C; water or air heaters having heat generating means F24H; combined heating and refrigeration systems F25B; heat exchange apparatus or elements F28; removing furring F28G; electric heating elements or arrangements H05B)

#### Note(s)

In this subclass, the following expression is used with the meaning indicated:

- "central heating system" means a system in which heat is generated or stored at central sources and is distributed by means of a transfer fluid to the spaces or areas to be heated.

#### Subclass index

##### CENTRAL HEATING SYSTEMS

With heat-transfer fluid: steam; hot water; hot air or exhaust gas; other fluid.....	1/00, 3/00, 5/00, 7/00
Combinations.....	9/00
District heating systems.....	10/00
By heat storage.....	11/00
Other systems.....	12/00

##### OTHER DOMESTIC- OR SPACE-HEATING SYSTEMS

Electric; Other.....	13/00, 15/00
----------------------	--------------

##### DOMESTIC HOT-WATER SUPPLY.....17/00

##### DETAILS.....19/00

#### Central heating systems

##### **1/00 Steam central heating systems** (F24D 10/00, F24D 11/00 take precedence)

- 1/02 • operating with live steam
- 1/04 • operating with exhaust steam
- 1/06 • operating with superheated steam
- 1/08 • Feed-line arrangements, e.g. providing for one-pipe system

##### **3/00 Hot-water central heating systems** (F24D 10/00, F24D 11/00 take precedence)

- 3/02 • with forced circulation, e.g. by pumps
- 3/04 • with the water under high pressure
- 3/06 • • Arrangements or devices for maintaining high pressure
- 3/08 • in combination with systems for domestic hot-water supply
- 3/10 • Feed-line arrangements, e.g. providing for heat-accumulator tanks, expansion tanks

- 3/12 • Tube and panel arrangements for ceiling, wall, or underfloor heating (electric underfloor heating F24D 13/02; special adaptations of floors for incorporating ducts, e.g. for heating or ventilating, E04B 5/48; building elements of block or other shape for the construction of parts of buildings characterised by special adaptations, e.g. serving for locating conduits, E04C 1/39; building elements of relatively thin form for the construction of parts of buildings with special adaptations for auxiliary purposes, e.g. serving for locating conduits, E04C 2/52) **[4]**

- 3/14 • • incorporated in a ceiling, wall or floor **[4]**

- 3/16 • • mounted on, or adjacent to, a ceiling, wall or floor **[4]**

- 3/18 • using heat pumps **[5]**

##### **5/00 Hot-air central heating systems** (F24D 10/00, F24D 11/00 take precedence; air conditioning F24F); **Exhaust-gas central heating systems**

- 5/02 • operating with discharge of hot air into the space or area to be heated
- 5/04 • • with return of the air to the air heater
- 5/06 • operating without discharge of hot air into the space or area to be heated
- 5/08 • • with hot air led through radiators
- 5/10 • • with hot air led through heat-exchange ducts in the walls, floor, or ceiling

## F24D

- 5/12 • using heat pumps [5]

**7/00 Central heating systems employing heat-transfer fluids not covered by groups F24D 1/00-F24D 5/00, e.g. oil, salt, gas** (F24D 10/00, F24D 11/00 take precedence)

**9/00 Central heating systems employing combinations of heat-transfer fluids covered by two or more of groups F24D 1/00-F24D 7/00** (F24D 10/00, F24D 11/00 take precedence)

- 9/02 • Hot water and steam systems

**10/00 District heating systems** [5]

**11/00 Central heating systems using heat accumulated in storage masses** (self-contained storage heating units F24D 15/02; storage masses, see the relevant subclasses)

- 11/02 • using heat pumps

**12/00 Other central heating systems**

- 12/02 • having more than one heat source (F24D 3/18, F24D 5/12, F24D 11/02 take precedence) [5]

### Other domestic- or space-heating systems

**13/00 Electric heating systems** (electric water or air heaters F24H)

- 13/02 • solely using resistance heating, e.g. underfloor heating

- 13/04 • using electric heating of heat-transfer fluid in separate units of the system

**15/00 Other domestic- or space-heating systems**

- 15/02 • consisting of self-contained heating units, e.g. storage heaters [3]

- 15/04 • using heat pumps [5]
- 

**17/00 Domestic hot-water supply systems** (combined with domestic- or space-heating systems F24D 1/00-F24D 15/00)

- 17/02 • using heat pumps [5]

**19/00 Details** (of water or air heaters F24H 9/00; of heat-exchange or heat-transfer apparatus, of general application F28F) [3]

- 19/02 • Arrangement of mountings or supports for radiators [3]

- 19/04 • • in skirtings [3]

- 19/06 • Casings, cover lids or ornamental panels, for radiators [3]

- 19/08 • Arrangements for drainage, venting or aerating (valves for drainage F16K, e.g. F16K 21/00, for venting or aerating F16K 24/00) [3]

- 19/10 • Arrangement or mounting of control or safety devices (control valves F16K; only the heater being controlled F24H 9/20) [3]