

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

F27 FURNACES; KILNS; OVENS; RETORTS

F27D DETAILS OR ACCESSORIES OF FURNACES, KILNS, OVENS, OR RETORTS, IN SO FAR AS THEY ARE OF KINDS OCCURRING IN MORE THAN ONE KIND OF FURNACE (combustion apparatus F23; electric heating H05B)

Note(s)

Attention is drawn to the references and Notes following the title of class F27 and Note (3) of section H.

Subclass index

CONSTRUCTIONAL FEATURES.....1/00
 HANDLING AND SUPPORTING CHARGE.....3/00, 5/00, 15/00
 PREHEATING CHARGE; COOLING; USING WASTE HEAT OR GASES.....13/00, 9/00, 15/02, 17/00
 ARRANGEMENTS OF ELECTRIC HEATING ELEMENTS.....11/00
 ARRANGEMENTS OF CONTROL AND SAFETY DEVICES.....19/00, 21/00
 OTHER FEATURES; OTHER DETAILS.....7/00, 25/00, 27/00, 99/00

1/00 Casings; Linings; Walls; Roofs (refractory materials C04B; firebridges for combustion chambers F23M 3/00)

- 1/02 • Crowns; Roofs
- 1/04 • characterised by the form of the bricks or blocks used
- 1/06 • • Composite bricks or blocks
- 1/08 • • • Bricks or blocks with internal reinforcement or metal backing
- 1/10 • Monolithic linings; Supports therefor
- 1/12 • incorporating cooling arrangements (constructions of tube assemblies in general F28)
- 1/14 • Supports for linings (F27D 1/10 takes precedence)
- 1/16 • Making or repairing linings
- 1/18 • Door frames; Doors, lids, removable covers

3/00 Charging; Discharging; Manipulation of charge (conveying systems characterised by their application for specified purposes not otherwise provided for B65G 49/00; moving charge through a furnace F27B 9/14)

- 3/02 • Skids or tracks for heavy objects
- 3/04 • Ram or pusher apparatus
- 3/06 • Charging or discharging machines on travelling carriages
- 3/08 • Screw feeders; Screw dischargers
- 3/10 • Charging directly from hoppers or shoots
- 3/12 • Travelling or movable supports or containers for the charge
- 3/14 • Charging or discharging liquid or molten material
- 3/15 • Tapping equipment; Equipment for removing slag
- 3/16 • Introducing a fluid jet or current into the charge (F27D 3/18 takes precedence) [3]
- 3/18 • Charging particulate material using a fluid carrier [3]

5/00 Supports, screens, or the like for the charge within the furnace (travelling or movable supports F27D 3/12)

7/00 Forming, maintaining, or circulating atmospheres in heating chambers

- 7/02 • Supplying steam, vapour, gases, or liquids
- 7/04 • Circulating atmospheres by mechanical means
- 7/06 • Forming or maintaining special atmospheres or vacuum within heating chambers (F27D 7/02 takes precedence)

9/00 Cooling of furnaces or of charges therein (F27D 1/00, F27D 3/00 take precedence)

11/00 Arrangement of elements for electric heating in or on furnaces (electric heating *per se* H05B)

- 11/02 • Ohmic resistance heating
- 11/04 • • with direct passage of current through the material being heated
- 11/06 • Induction heating, i.e. in which the material being heated, or its container or elements embodied therein, form the secondary of a transformer
- 11/08 • Heating by electric discharge, e.g. arc discharge
- 11/10 • • Disposition of electrodes (automatic control of temperature G05D 23/00; electric discharge apparatus H01T; arrangements for feeding or guiding electrodes H05B 7/10; automatic control of power by positioning of electrodes H05B 7/144) [3]
- 11/12 • with electromagnetic fields acting directly on the material being heated

13/00 Apparatus for preheating charges; Arrangements for preheating charges

15/00 Handling or treating discharged material; Supports or receiving chambers therefor

- 15/02 • Cooling

F27D

- 17/00

Arrangement for using waste heat (heat-exchangers per se F28); Arrangement for using, or disposing of, waste gases (removing fumes in general B08B 15/00)
- 19/00

Arrangement of controlling devices
- 21/00

Arrangement of monitoring devices; Arrangements of safety devices
- 21/02

- Observation or illuminating devices
- 21/04

- Arrangements of indicators or alarms
- 25/00

Devices for removing incrustations [2010.01]
- 27/00

Stirring devices for molten material (F27D 3/14 takes precedence) [2010.01]
- 99/00

Subject matter not provided for in other groups of this subclass [2010.01]