

# 12. Chimney

# Basic Characteristics of Chimneys

- **Chimneys** are designed to remove flue gases from appliances to a free space outside the building where they are scattered so as not to endanger the quality of the living environment of the house's residents.
- The chimney consists of:
  - One or more chimney flues
  - Chimney casing
  - Sweep openings
  - Pickup openings
  - Vent connector
  - Chimney heads, or extensions

# Classification of Chimneys

- **According to the appliances** we distinguish chimneys for:
  - Solid fuel chimney x Liquid fuel chambers x Gaseous fuel chimney
- **According to the structure**, we distinguish chimneys for:
  - Single-layer chimneys x Multi-layer chimneys
- **According to the location of chimneys**, we distinguish chimneys for:
  - Fitted or built-in chimneys x Solitary chimneys
- **According to the ground plan shape of the chimneys** we distinguish:
  - Square chimneys x Rectangular chimneys (up to 1: 1.5) x Circular chimneys

# Classification of Chimneys

- **According to the size of the flue** to distinguish:
  - Narrow chimneys (up to 40,000 mm<sup>2</sup>) x Medium chimneys (over 40,000 mm<sup>2</sup>) x Man chimney (minimum cross-section up to 10 m high is 450 x 450 mm)
- **According to the built-in material** we distinguish chimneys for:
  - Chimneys made of non-flammable or non-easy possibly flammable materials
  - Chimneys made of materials with an absorption capacity not exceeding 20% of the specific weight
  - Chimneys made of materials resistant to the effects of flue gases
  - Chimneys made of frost-resistant materials
- **According to the arrangement of flues**, we distinguish chimneys for:
  - Continuous chimneys x Storeys chimneys x Overflow chimneys x Tree chimneys
- **According to continuous longitudinal axes** we distinguish chimneys for:
  - Direct chimneys x Moving chimneys

# Design and Implementation of Chimneys

- **The chimney flue** should have a constant cross-section along the height.
- **The chimney casing** should be non-flammable, low absorptive and resistant to flue gases.
- **Single-layer chimneys** must have a masonry chimney thickness of at least 140 mm.
- **Multi-layer chimneys** are usually three-component. They are consisting of **chimney liner**, an **insulating layer** and a **chimney casing**.
- The **flue connector** is part of the chimney, which connects the appliance and the chimney flue to which the exhaust gas.
- **Sweep openings** are designed for flue and liquid fuels that cannot be swept straight through the chimney head.
- **Pickup openings** are designed at the level of the soil of the chimney flue.